

AMERICAN ARTISAN

MARCH 1960

Single copy price 40¢

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• • The Magazine of

CENTRAL RESIDENTIAL AIR CONDITIONING

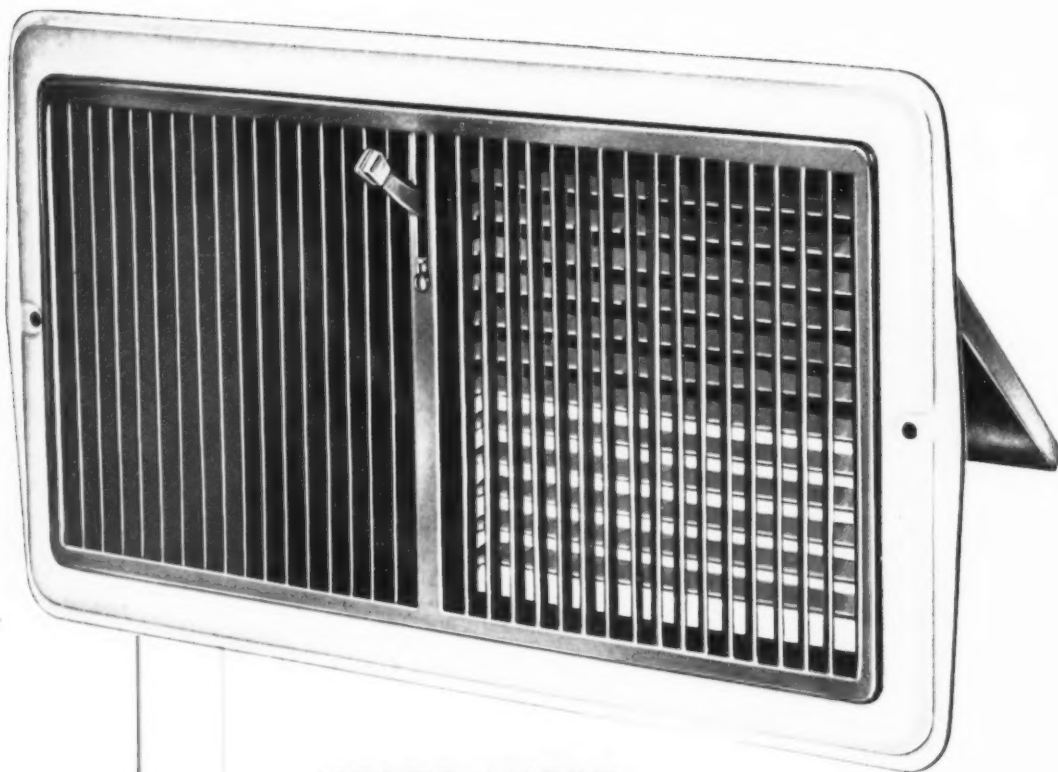
WARM AIR HEATING • SHEET METAL CONTRACTING



PROSPECTS ARE INVITED to visit the company's large and well lighted showroom to see an extensive array of heating and air conditioning equipment . . . page 60

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LOOK
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Control
for
QUALITY



*Air Control offers you a complete
selection of registers, grilles, diffusers,
and sheet metal services . . . the
most complete line available
in the world.*

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*in the beautiful contoured lines
and complementing two-tone chameleon beige finish*

... that blends perfectly with any room interior. Air Control No. 20 Series Registers are the finest you can install on any heating or cooling system. They provide that "added touch" that makes your installation outstanding.

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Two sure signs of reliable service



MODEL J



MODEL H



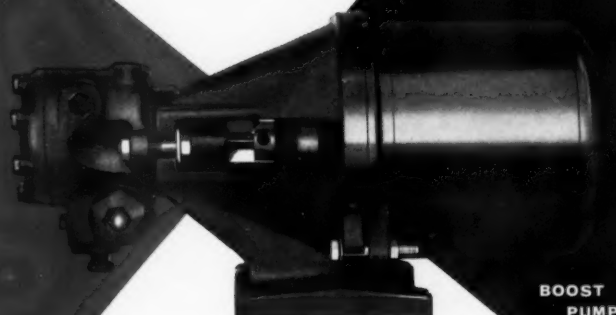
MODEL OB



MODEL E



MODEL PB



BOOST
PUMP

SUNDSTRAND FUEL UNITS and Sundstrand certified service—original quality backed by expert, factory-trained service specialists—your guarantee of reliability and customer satisfaction, year after year.

There is a Sundstrand fuel unit for every heating need:

Model J Single-Stage Fuel Units for light oil. Capacities 3, 6, 10, 14, and 20 gph. Unit includes pump, strainer, and combination regulating cut-off valve.

Model H Two-Stage Fuel Units for light oil, high-lift or long-line applications. Capacities 3, 6, 10, 14, 20, and 40 gph. Incorporates pumping members, strainer, and combination regulating cut-off valve.

Model OB Single-Stage Pumps for light oil. Capacities to 35 gph. Strainer optional.

Model E Single-Stage Fuel Unit for use with preheated #5 and #6 oil. Capacities 20 and 40 gph. Includes pumping members, strainer, and combination regulating cut-off valve.

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Boost Pump—a compact pump-motor-bracket assembly for supplying one or more overhead furnaces. Available with Model J single-stage or Model H two-stage fuel unit—with or without drive motor. Cut-off valve prevents drain-back when unit shuts down. Capacity 30 gph.

Note: Capacities stated above based on operation at 1750 rpm. Light oil fuel units and pumps also available for speeds to 3600 rpm. Complete information available upon request.



Specify Sundstrand... *first in fuel units*

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AMERICAN ARTISAN

... The Magazine of
CENTRAL RESIDENTIAL AIR CONDITIONING
WARM AIR HEATING • SHEET METAL CONTRACTING

MARCH 1960

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Founded 1864; Vol. 97 No. 3

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Published monthly by Keeney Publishing Company, 6 N. Michigan Ave., Chicago 2, Ill., U.S.A. Copyright 1960 by Keeney Publishing Company.

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Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"



Yearly Subscription Price—U.S. and possessions, \$3.00; Canada, \$5.00; Cuba, Mexico, South America, Central America, Spain, \$6.00; Elsewhere, \$7.00. Single copies, U.S. and possessions, 60c. Back numbers, 85c. January, 1960 Directory Issue, \$1.50. SECOND CLASS POSTAGE PAID AT CHICAGO AND MENDOTA, ILL.

SUBSCRIBERS—*Change of Address:* Publisher needs five weeks' advance notice, mail address from current issue envelope, and new address with city postal zone number. Mail to . . . American Artisan, 6 N. Michigan Ave., Chicago 2, Ill., U. S. A.

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2 $\frac{1}{32}$ " D



SERIES 530 combination fan and limit control is available with or without manual switch for continuous fan operation.

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Here it is! It's all new...yet, each component part is proved by years and years of dependable, accurate performance in the field!

Look at its compact, *space-saving size* and shape...see its *easy-to-install single element* which is solid charged for utmost *accuracy and reliability* in responding to temperature changes. Now, look at the inside...notice its two separate *sealed contact units*, one for the fan and the other for the safety limit. Large, accessible terminals assure *easier wiring*. Note the large, easy-to-read numerals on the limit and fan scales...indicators provide simple, *finger-tip adjustment* for any desired fan operation or limit setting.

Learn more about this new control...ask your wholesaler or write to the Penn factory!

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

the editor's notebook

Thumbing Through This Month's Artisan

... we find the biggest responsibility a sheet metal contractor faces in preparing a bid for a ventilating system is making sure all equipment and work covered by the consulting engineer's specifications is included. In *Check Those Specs* we find a detailed check-list that helps to avoid missing essential equipment and work required and that all duct specifications meet the requirements outlined in the SMACNA Duct Construction manual. We find the outline for preparing a bid follows a set procedure, even to making adjustments for special conditions that pertain to certain types of work. Two valuable check-lists which will help you minimize costly errors and catch omissions of parts and operations, have been included.

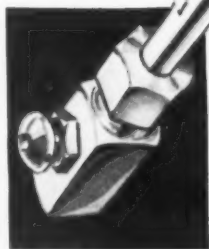
Estimating

... unit cost of production items is an exacting procedure that must be performed each time a quotation for a new item is requested by a manufacturer. *Teamwork Pays Big Dividends in This Departmentalized Operation* shows how a sheet metal contractor organized his firm so each officer is responsible for certain job functions and acts as part of the team that estimates unit cost of production items. We find that the estimating method used by this firm is effective and accurate, but requires constant checking by all supervisory personnel in order to submit a bid that will adequately cover the cost involved and include a fair profit. Other factors outlined include computing the quotation, allocating overhead,

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for all
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appliances

safe
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convenient
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NOW . . . Modern Lighters, Inc. has developed a new "carry-over" tube for sectional burners . . . approved and accepted by leading manufacturers. Send for complete information and samples.

(U. S. Pat. No. 2728384, Can. Pat. No. 566970)

WRITE FOR
COMPLETE
LITERATURE



**MODERN LIGHTERS
INCORPORATED**
Northville, Michigan

the editor's notebook

and tabulating each part cost.

Noise

... we ask I. I. Solzman *How to Reduce Power Exhauster Noise?* and find there are several steps that can be taken when installing the power ventilator to keep noise below the annoying level. We find there are other factors to consider even when the roof exhauster is properly designed aerodynamically; if it is structurally sound in design; if it has adequate isolators; and if it is installed with the utmost care. We find ways to measure sound power, and how noise will vary according to room acoustics. We find out what factors should be provided for in the design to achieve a quiet installation, and what things must be done to assure a satisfactory installation.

Heating

... electric home heating is making a strong bid in many sections of the country because improved techniques such as the central air distribution system, and additional information on thermal insulations thickness have significantly reduced operating costs for year 'round air conditioning systems. In *Insulation Requirements for Electric Heating Affects Size of Air Conditioning Equipment* it is explained what should be included in the design of a structure economically suitable for electric heating, using central air handling and air treating equipment. Other points brought out pertain to sales features, future of electric heating, and the importance of adapting public acceptance to capture this growing market.

***LOCKFORMER* EQUIPMENT**

**Keeps Your Bids Low Enough To Land More Jobs,
Your Costs Low Enough To Make Bigger Profits**

Lockformers will roll Pittsburghs (or other locks) 15 times faster than by hand methods . . . and do it at ½ the cost. They do work-horse duty around the clock, every day and you don't need "pros" to run them.

Your savings in time and labor let you bid

low enough to sell more business. And you still make extra profits because your overall fabrication costs go down at least 50%. Sheet metal shops equipped with Lockformers *grow fast* for these reasons. Your shop can, too.



Lockformer Model 20

Lockformer Model 24
Equipped with Auto-Guide
Power Flanger Attachment

Lockformer
Model 22
equipped with the
Portable Slitting
Attachment



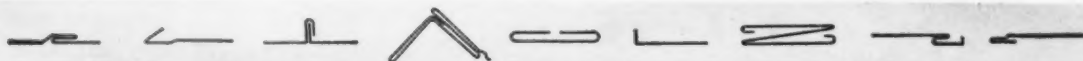
One man with a Lockformer makes more Pittsburgh Locks than 16 men with 8 brakes



Write for Free Lockformer Catalog



Manufactured by
The Lockformer Co.
4615 W. ROOSEVELT ROAD
CHICAGO 50, ILLINOIS



In Canada: Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Ontario

the editor's notebook

(Continued)

Promotion

... how a well planned and continuous sales promotion program, conducted over a period of years can open doors for salesmen. In *Air Conditioning Sales Record Built by Steady Promotion* we see how well-planned product promotion enables the dealer-contractor to educate prospects in the concepts of good warm air heating and summer air conditioning systems and at the same time establish the firm as an authority in the air handling field. We find the success of sales promotion lies in adhering to a well-defined promotion plan, and using a variety of approaches through various media designed to educate and pre-sell prospects.

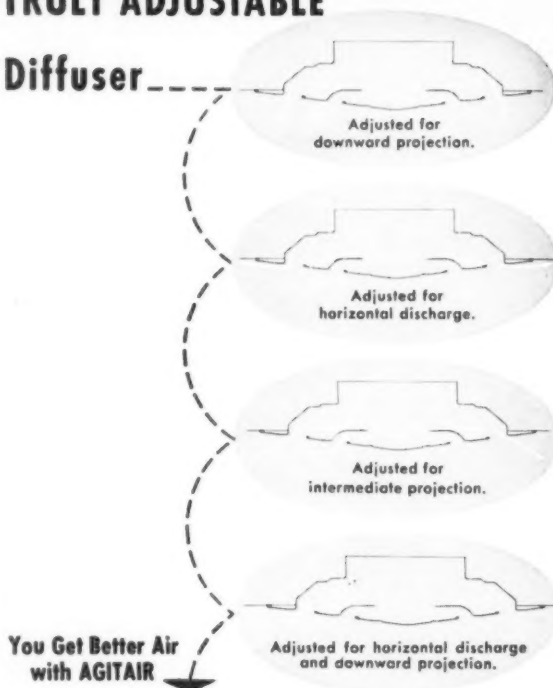
Vivid Terminology Helps to Sell Prospect

DID YOU see Reader's Digest for February? If so, I know you must have read C. W. Nessell's article "How to Keep Your House Warm in Winter." Mr. Nessell, who works for Minneapolis-Honeywell Regulator Co., served for a number of years as chairman of the National Warm Air Heating and Air Conditioning Association's field research committee. Testing and analyzing heating systems was only part of his job. Learning to talk to customers in a language they could readily understand was a skill he developed.

Mr. Nessell puts this skill to use in the four page article in Reader's Digest. Explaining to the homeowner what happens inside his house during the winter. He uses terms such as "metabolism of your house;" "your furnace gulps a huge quantity of indoor air and sends it billowing up the chimney;" "an older, leakier house;" and many other

Take a look at a TRULY ADJUSTABLE

Diffuser



AGITAIR®
TYPE "OA"

Here's a distinctively different diffuser with a radically new means of controlling air direction at four different angles of discharge simultaneously. Without changing the position of the spinnings, AGITAIR "OA" diffusers can be adjusted to put the air where you want it in one, two, three or four directions . . . after installation. Result: Segmentized . . . positive adjustability with Finger-Tip Air Direction Control.

Write for Bulletin C-101

Contains complete data, performance charts, construction details, etc.

AIR DEVICES INC.
185 MADISON AVENUE, NEW YORK 16, N. Y.
AIR DIFFUSERS • FILTERS • EXHAUSTERS

the editor's notebook

(Continued)

strong but self-explanatory phrases.

These are terms that salesmen can easily adapt to their sales presentations to help prospects understand what is being considered to overcome the problems involved in providing comfort throughout the entire house.

If you haven't read Mr. Nessell's highly informative article, I recommend it both for reading and using.

Long Island City Gets New Sheet Metal School

I LEARNED recently from Charles McGraw, New York City, that the joint apprenticeship committee of Sheet Metal Workers' Local Union #28 and the Roofing and Sheet Metal Crafts Institute have allocated funds for the establishment of a school for the training of registered apprentices. The school is located at 40-17 — 22nd St., Long Island City. It is now in the organizing stage under the direction of Michael Mineiri, who will serve as chief instructor and administrator. The school will accommodate 400 students.

It's encouraging to note that more and more people in our industry are becoming aware of the need for training of this type and are taking steps to provide the necessary educational facilities.

Don't Overlook the 'Under \$5000' Prospect

HAVE YOU been under the impression that families with incomes of less than \$5000 aren't good prospects? Then perhaps the information developed by a recent survey, a copy of which was sent to me, will show you that this group does spend money and that its members are considered good loan risks. The report states:

"Significant conventional-

HOW TO **WIN** CUSTOMERS AND **INFLUENCE** PROFITS!

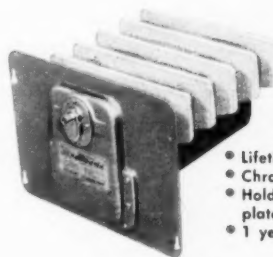


GENERAL HUMIDIFIER puts moisture in . . . **GENERAL FILTER** takes harmful dirt out

Picture *your* customers in this happy setting . . . you've just installed a trouble-free GENERAL HUMIDIFIER and a dependable GENERAL FUEL OIL FILTER in the heating system. Typical dealer profit? About \$15.00!

Sell your customers this double heating protection: a comfortable, *healthy* home thanks to increased humidity; steady, dependable heat that gives maximum efficiency, saves on fuel bills, ends middle-of-the-night call-backs for you!

YOUR SALES MARKET IS HUGE! Fewer than *one warm air furnace in five* has a humidifier. Millions are without a filter—or dirt-clogged cartridges are changed only infrequently. Every time you check a heating system, look for these easy sales!



Model 800 "Moisture-Matic"

- No float to stick or clog
- Corrosion-proof molded pan
- Lifetime neoprene diaphragm
- Chrome plated valve
- Holds up to 15 "Porous Weave" plates
- 1 year guarantee on parts

General Filter

- Lifetime cast iron and steel construction protected with rust-resistant plastic coating
- Wool felt cartridges—trap moisture, dirt, lint; prevent nozzle clogging
- Wool felt cleaned and bonded to center core
- 1A-25A, 2A-700A, 2A-300



HEALTHFUL HOMES are **GENERAL**-humidified . . . **GENERAL**-filtered



Member of the Humidifier Association

GENERAL FILTERS, Inc.

43800 GRAND RIVER AVE.
NOVI, MICHIGAN

IN CANADA: Canadian General Filters, Ltd., 39 Crockford Blvd., Scarborough, Ontario

the editor's notebook

(Continued)

loan home buyer characteristics were revealed by a 1958 United States Savings and Loan League survey. The study was based on conventional mortgages made in 1957 by representative savings associations in 22 metropolitan areas, and it disclosed the dominant role of these institutions and of the conventional loan in the financing of home ownership for the lower and middle income groups.

"Among the more pertinent findings: The median annual family income of the borrower was \$7300, and nearly three-fifths (56 percent) of incomes ranged from \$5000 to \$9000. Nearly 15 percent of the families had an income of less than \$5000. The median age of borrowers at the time of loan closing was 37 years; in the case of borrowers for new homes it was 36 years, and in the case of those purchasing existing properties it was 39 years. Thirty-seven percent of the borrowers were under 35 years of age.

As to the size of conventional mortgages made by associations, one-fifth of them were in amounts of less than \$8000. For all homes acquired, the median loan amounted to \$11,131; for the new home borrower, the median loan was \$11,604, and for the purchase of an existing dwelling it was \$11,106."

Analyze Data To Get More Prospects

SOME SURPRISING and useful facts come to light when you study data made available by municipal and private sources. Often construction data provides an insight into heating and other sales potentials as well as the volume of additional sales that can be expected from growing markets. Of course this data doesn't read this way directly; it must

NEW LESLIE VersaCAP

Cuts Your Stock Requirements

2/3



The Only Adjustable Vent Cap

VERSACAP's exclusive adjustable collar greatly reduces inventories since four models fit pipe diameters from 3" thru 8½" inclusive. Now, for the first time, dealers can afford to stock a cap for double-wall metal vents.

Check these Important Features:

- Reduces your cap inventory by ⅔
- Wide-range adjustable collar (pat. pend.)
- No down draft
- Positive draft action (four 360° openings)
- Clean modern design
- Bird proof
- Clog proof from debris, snow and ice
- Baffles stop rain and snow
- Available in corrosion resistant aluminum
- For all fuels . . . gas, oil, coal, wood

The all new design insures top performance on double-wall metal vents, standard chimneys and any roof terminated vent pipe. Improved performance from the circular louvered design, plus a modern unobtrusive appearance. VERSACAP is so versatile it can be used for any type of installation. Solve those problem jobs . . . eliminate costly call-backs . . . stock and install the VERSACAP.

Write today for the new VERSACAP

catalog sheet

LESLIE WELDING CO., INC.
2933 W. CARROLL AVENUE • CHICAGO 12, ILLINOIS
Plants in Chicago and Atlanta

the editor's notebook

(Continued)

be transmitted by the reader into his own particular connection with the industry.

Do you know which major city in the country had the largest number of new housing units built per 1000 population during 1958? It was Phoenix, Ariz., with 49. The runnerup was San Diego, Calif., with 39. A close third was Miami, Fla., with 38. Other cities with large growth potentials were Denver, Colo., with 19; Columbus, Ohio, with 18; and Los Angeles, with 18.

Volumewise, New York-Northeastern New Jersey was first with 81,531 building permits during 1958. Los Angeles was second, with 78,234, and Chicago third, with 40,235. Other large cities ranked as follows in number of building permits secured during 1958: San Francisco-Oakland, 24,816; Detroit, 22,834; Washington, D.C., 22,389; San Diego, Calif., 21,644; and Philadelphia, 19,784.

What Is the Price of Success in Industry?

THE PRICE of success has been spelled out by the Alexander Hamilton Institute in some of its sales promotional literature. One piece reads:

"I often wonder what it is that brings one man success in life, and what it is that brings mediocrity or failure to his brother. The difference can't be in mental capacity; there is not the difference in our mentalities indicated by the difference in performance. In short, I have reached the conclusion that some men succeed because they cheerfully pay the price of success, and others, though they may claim ambition and a desire to succeed, are unwilling to pay that price.

That price is:

To use all your courage to force yourself to concentrate

These brand-new units open new markets and protect old markets for the warm air heating and air conditioning dealer

Here are the latest developments in scientific heating and air conditioning! Available now at low competitive prices after extensive field testing and development work. Together with the other Air Conditioning Division winter and summer air conditioning units, they form a really complete line for every installation need and every fuel requirement, whether you're in Maine or the tip of Florida.

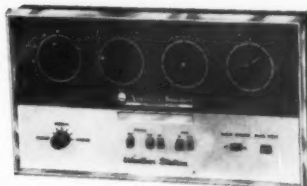
Electric Furnace (Upflow & Downflow)—New-fashioned heating plus traditional quality!



Here are the units that will keep *electric heating* in the qualified hands of central warm air heating and air conditioning dealers! The furnaces come completely assembled, ready to connect to a power supply. They are factory-wired for 82,000 Btu heating capacity; simple reconnections can reduce the heating capacity by steps down to 41,000 Btu. Each unit comes in two models: one with 1,200 cfm blower capacity for use with a 2- or

3-ton "add-on" cooling unit; and one with 2,000 cfm blower capacity for use with a 5-ton "add-on" cooling unit. Both models are compact enough for installation in any convenient location . . . closet, alcove, hallway or basement . . . no flue required. And servicing is easy—the control panel swings out for easy access.

Weather Station—Top-quality comfort control your customers can see!

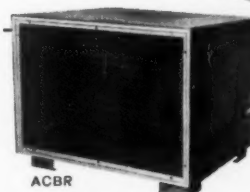


heating and air conditioning system you installed. The Weather Station is simple to install. Push buttons set the system for heating, cooling or air circulation and filtration only. A clock-thermostat maintains temperature control with automatic night set-back. There's a warning light that signals when filter needs changing.

The American-Standard Weather Station is a profit item that will sell on sight. It puts controls and weather instruments all in one visually dramatic package. It prompts home owners to brag about the wonderful

Heat Pumps—Packaged and Split-System Models—They heat and cool for year-round comfort!

ACPR
PACKAGE
UNIT



ACBR

SPLIT
SYSTEM



RCBR

The ACPR Packaged Heat Pump has been called "the most efficient low-cost central air conditioner on the market." It is factory-assembled and pre-wired, ready to install in an attic, basement, crawl space, transom or central hallway. The Split System consists of the ACBR Unit (installed outside the house) and the RCBR Inside Unit, with its self-contained, high-capacity blower (mounted in the duct system). American-Standard Heat Pumps are available in 2, 3, 4 and 5 H.P. A single automatic thermostat provides the desired temperature in both summer and winter, by means of an automatic gas-reversing valve in the heat pump. The units have a De-icing System, which prevents ice build-up, and a Condensate Removal System. A Supplementary Electric Heater, Model SH, is available in four heating capacities—13,648, 27,296, 40,944 and 54,592 Btu—and with step-by-step cut-in control of the heating elements to prevent overloading the power line.

Get the new data sheets and price lists today—your American-Standard Air Conditioning Division Distributor has them.

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AMERICAN-Standard

AIR CONDITIONING DIVISION

ELYRIA • OHIO

**the editor's
notebook**

(Continued)

on the problem in hand, to think of it deeply and constantly, to study it from all angles, and to plan;

To have a high and sustained determination to put over what you plan to accomplish, not if circumstances be favorable to its accomplishment, but in spite of all adverse circumstances which may arise — and nothing worth while has ever been accomplished without some obstacles having been overcome;

To refuse to believe that there are any circumstances sufficiently strong to defeat you in the accomplishment of your purpose."

These are recommendations that are extremely difficult to follow. That's why so many men never attempt to advance themselves in their business. But those who conscientiously put these thoughts to work see their business grow year after year in volume, profit and stature.

**Is Your Business
Managed or Drifting?**

HERE'S ANOTHER SBA "rule to manage by":

Small Business
Administration
Washington, D.C.

Dear Mr. Barnes:

If we boil down the responsibilities of a manager into one sentence, and a short sentence at that, I think it would be something like this: The manager of a business is primarily a decision-maker. He either makes many small and large decisions every day or they are made for him. He either creates the policies and procedures of his business or they are created by the decisions he does not make.

Here is what I mean. The owner of a men's haberdashery store is told of a

THERE ARE

SAVINGS

IN ALL DIRECTIONS



save in...

COST OF UNIT



LAYOUT APPLICATION

- designed with yesterday's experience for today's market
- styled, built and priced right
- shipped complete, ready to install

WRITE ... **AIR-EASE** ... for information and name of nearest distributor

THE JOHNSON FURNACE COMPANY
2129 WEST 117th STREET, CLEVELAND 11, OHIO

**the editor's
notebook**

(Continued)

new shopping center and is invited to open a branch store in it. He does a little investigating, talks to a few people, likes the idea, but is so busy with inventory, buying, and changing his window displays that time passes and no decision is made. Finally, he reads that a competitor has taken the lease and will be open for business the following month. He has to live with that decision, although he did not make it himself. To put it another way, his business was not managed, it was just drifting, sometimes to his advantage, often not.

Why is it that so many decision are made on the spur of the moment or that no decision is made at all? Maybe we don't like to think. Maybe we feel we don't have enough information with which to reach a decision. Maybe we just want a little time "to think it through." Whatever it is, or maybe there is no reason at all, lots of us in and out of business are procrastinators. We put off a decision until tomorrow, and tomorrow often does not arrive at all.

Another point to manage by is: Solve as many problems today as possible. There'll be more tomorrow to keep you occupied.

Sincerely,

Wilford White, Director
Office of Management
and Research Assistance

Doesn't the story about the men's haberdashery operator sound familiar? Same play, just different characters. Watch what Mr. White has to say next month about three ideas that will help you in the matter of wise decision-making.

Clyde M. Barnes

EDITOR

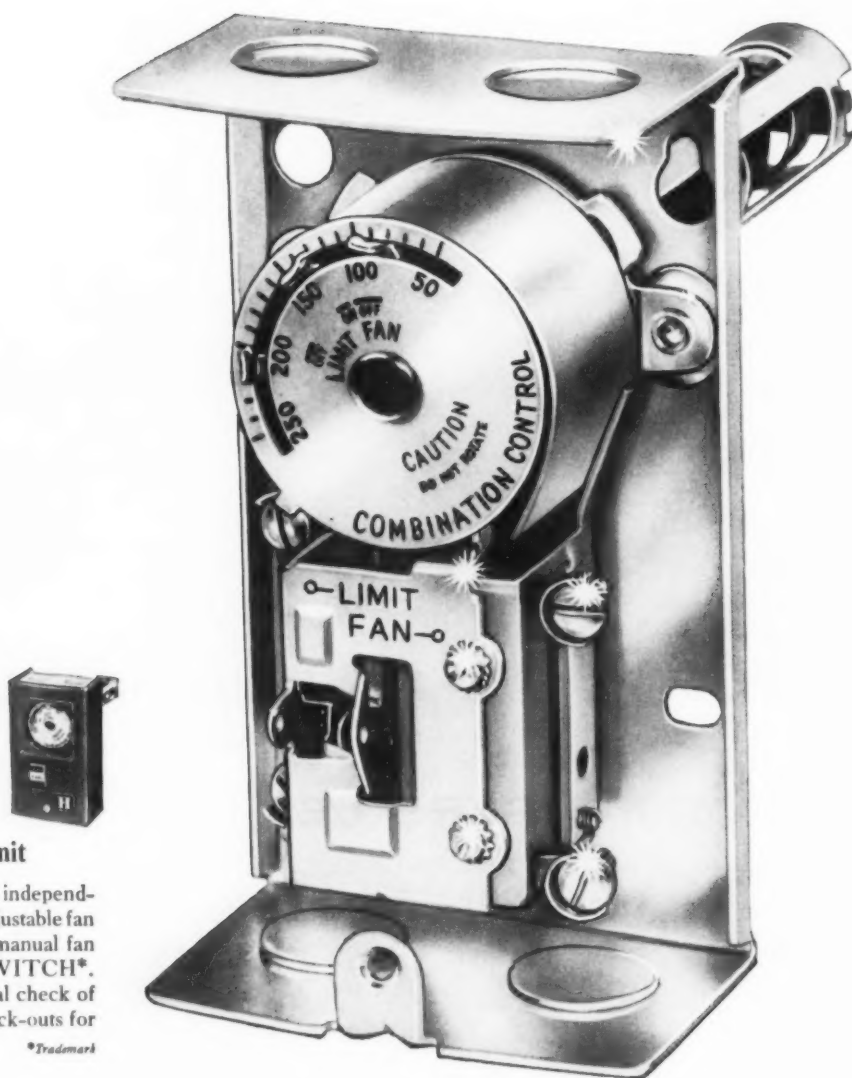


LIMA DIFFUSERS LET YOU HEAR the kitten's purr! Heavy-duty welded construction of Lima products keeps them whistle-free at highest air velocities. Really rigid, rugged and rattle-proof. Only thing you'll hear is loud praise for your whisper-quiet Lima installation. Cost? Not a penny higher! Send for latest Lima catalog of Registers, Diffusers and Grilles.

PUT LIMA QUALITY IN HEATING-COOLING JOBS

***Lima* REGISTER CO., LIMA, OHIO**

WVI



Honeywell L498B Fan Limit

Has adjustable fan setting with independent fan-on and fan-off levers; adjustable fan differential and limit settings; manual fan switch; precision MICRO SWITCH*. Window in cover permits visual check of operation. Top and bottom knock-outs for easy wiring.

*Trademark

SE

WISE contractors install the
Honeywell L498B Fan Limit to
please customers, cut call-backs.

And many of these men are wiser for having taken advantage of Honeywell's dealer education programs. 103,730 men profited from them last year. And this is only *one* of lots of ways you profit by handling all-Honeywell, matched controls. For when you deal with Honeywell, you're *backed* by Honey-

well. Backed 100% by the best service in the industry and a complete line of quality products. And you get reliability—easier installation—simplified inventories—training school for your crew—*plus* really fast help when you need it from 112 Honeywell sales-service offices close as your phone.

75th
PIONEERING THE FUTURE
YEAR

For information on Honeywell's complete line of control systems for heating and cooling, call your local Honeywell office, or write Minneapolis-Honeywell, Dept. AA-3-15, Minneapolis 8, Minnesota. Honeywell sales and service coverage is world-wide.

Honeywell



First in Control
SINCE 1885

YOU GET MANY YEARS
OF VALUABLE
ROOFING DESIGN EXPERIENCE
when you specify

REVERE

Aluminum Gravel Stops

Since 1806, when Revere roofing copper was first used on the steeple of the Old North Church in Boston, Revere has built a vast background of experience in the principles of roofing construction. Continuing research by Revere in this field covers not only copper but aluminum as used by the building and construction industries.

Newest result of this continued effort has been the development of Revere Aluminum Gravel Stops in 4 basic shapes to meet all requirements of modern design and construction.

All types are extruded, and designed to be held down by screws, making disassembly easy without damage to stop

or roof, for replacement of flashing or built-up roofing.

Inside and outside welded corners are available, as well as extruded aluminum expansion joint covers. Revere aluminum gravel stops are extruded with a smooth, even surface free from ripples, and highly resistant to deformation which could mar the unbroken line of the fascia band. Made of Revere Alloy 6063-T42, which is fully proved in architectural application, they combine minimum staining with a desirably neutral color.

In addition to a superior gravel stop you also will find Revere's Technical Advisory Service most helpful in aiding you with any special roofing design problems.

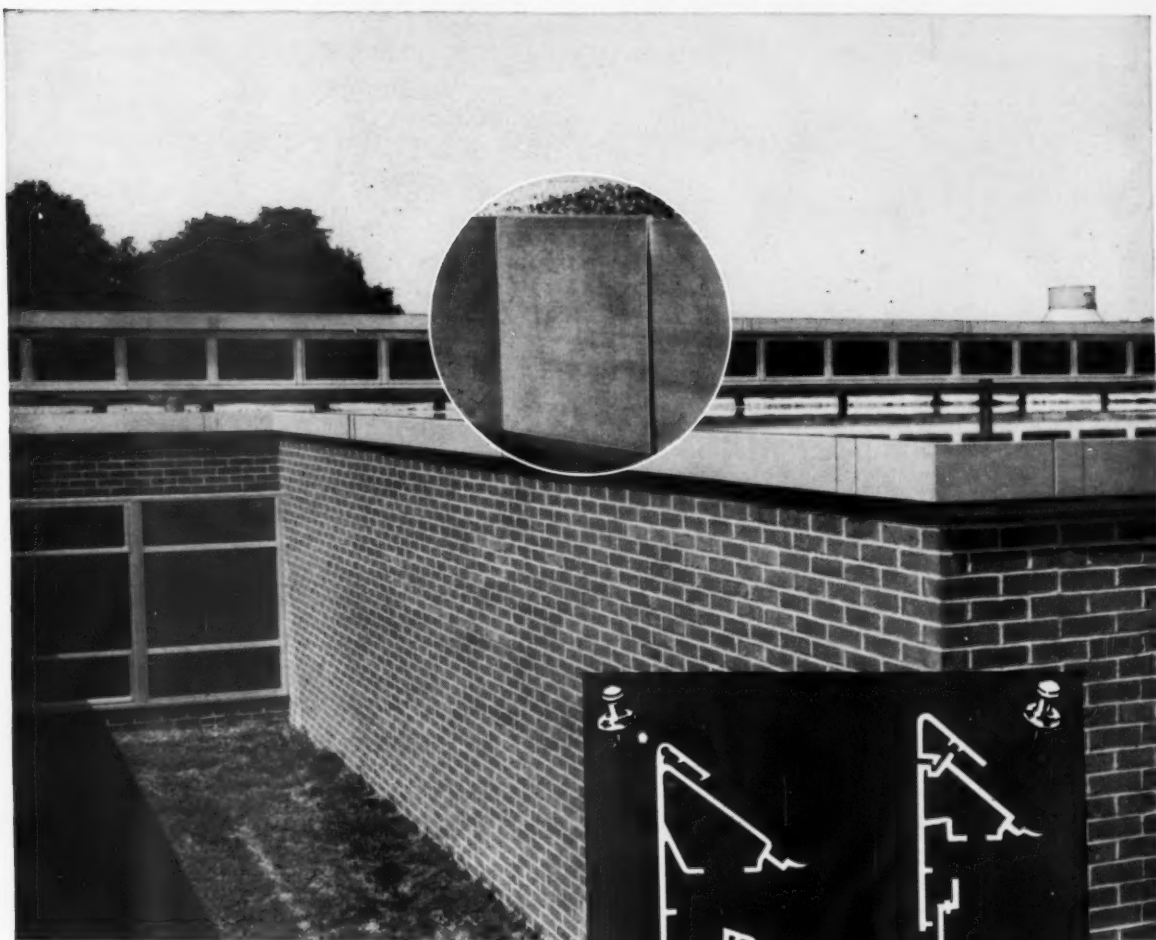


REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.

Mills: Rome, N. Y.; Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles, Riverside and Santa Ana, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb.
Sales Offices in Principal Cities. Distributors Everywhere.

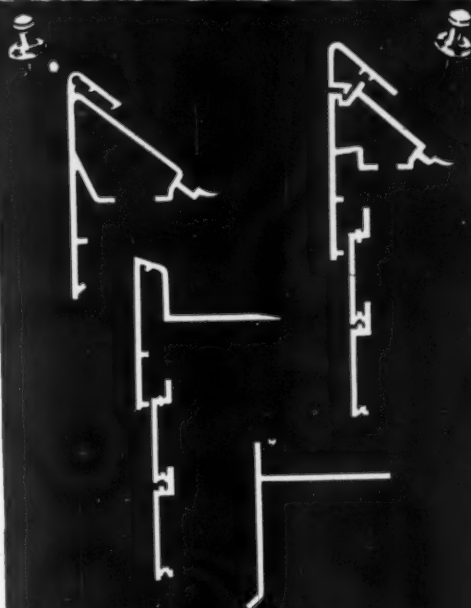


Revere Aluminum Gravel Stop as applied to roof of school building. Close-up in circle shows quality of the factory-formed, extruded joint cap and neatness of installation made possible with Revere Aluminum Stops. Note how the cover plate hugs the gravel stop fascia.

SEND TODAY FOR THIS SPEC. FOLDER FOR YOUR A-I-A FILE, OR SEE IT IN SWEET'S CATALOG

This folder contains all you'll need to know regarding the specifications and applications of the 4 types of Revere Aluminum Gravel Stops.

Revere has also just issued a 28-page booklet, "Revere Aluminum Components for Modern Structures," which you will find a valuable adjunct. This may also be found in *Sweet's Architectural and Industrial Construction Files*.



4 TYPES TO FIT ALL ROOFING REQUIREMENTS

- Uniformly extruded cross-section
- Enduring: will not rust or stain
- Straight, clean, continuous line
- Easily installed: factory-formed extrusions insure uniformity
- Easily removed for replacement of roofing felts
- Non-contrasting color for architectural combinations



Free area
capacity
certified by
Metal Ventilator
Institute

50 sq. in.
**GUARANTEED
FREE AREA**



Roof Louver — For buildings that have no gable ends. Easily installed on roofs of any pitch. Free area, 50 sq. in. Overall size, 16" x 18 1/2".

Competitively Priced

Pleasing design... solid construction

MILCOR ROOF LOUVER VENTILATORS

Meet FHA Requirements

Now you can guarantee your customers 50 full square inches of free area capacity in a roof louver so well constructed, and so attractively designed, they'll be amazed you can offer it at such a low price.

Now every builder can afford to provide the vital attic ventilation his houses need. No need to skimp on free area because of costs. New Milcor Roof Louver Ventilators are priced to compete with many less effective ventilators on the market.

Free area capacity, shown on the label of every Milcor Ventilator, is certified by the Metal Ventilator Institute.

Write our nearest branch for price list.



MILCOR

INLAND STEEL PRODUCTS COMPANY

Dept. C, 4025 WEST BURNHAM STREET, MILWAUKEE 1, WISCONSIN

PART OF MILCOR'S BROAD LINE OF 4,979 QUALITY BUILDING PRODUCTS

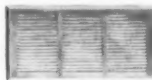
— that makes it easy to combine LCL
quantities for truckload or carload savings



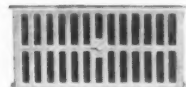
Stationary Louver — Flush and self-casing designs. 8" x 8" to 24" x 30".



Triangular Louvers — Fixed and adjustable types. Sizes to fit various roof pitches.



Under-Eave Louver — Finned louvers deflect rain and snow. Three sizes, 4" x 16", 6" x 16", 8" x 16".



Foundation Grilles — For crawl spaces and windowless basements. Size of one concrete block.

SM 24

BALTIMORE, BUFFALO, CHICAGO, CINCINNATI, CLEVELAND, DETROIT, KANSAS CITY, LOS ANGELES, MILWAUKEE, MINNEAPOLIS, NEW ORLEANS, NEW YORK, ST. LOUIS

Silver Shield Gets AGA Support at Promotion Level

NEW YORK CITY — G. J. Tankersley, chairman of the American Gas Association's gas heating task force, reports that his group has endorsed the Silver Shield program of the National Warm Air Heating and Air Conditioning Association and will help promote gas utility participation. AGA's promotion bureau will prepare special gas heating newsletters for distribution to utility company residential sales departments. The newsletters will feature case histories of successful gas company Silver Shield promotions. The bureau will also distribute Silver Shield promotional material produced by NWAHACA.

In announcing AGA's support of the Silver Shield program, Mr. Tankersley noted that the gas industry's house heating business has nearly tripled in the past 10 years. An estimated 20.4 million residential customers currently heat their homes with gas, he said.

Modernization to Boost 1960 Sales

NEW YORK CITY — "The nationwide war on obsolescence is on in earnest," according to Edward A. Norman, president, Gas Appliance Manufacturers Association. He pointed out that in 1959, more than half of the total of 9,000,000 pieces of residential gas equipment produced in the United States went into existing homes for modernization of heating systems and other home improvements. Mr. Norman predicted that the first year of this decade "should see new modernization records set."

SMACNA Convention Plans Nearing Completion

ELGIN, ILL. — Events now being planned for the 1960 annual convention of the Sheet Metal and Air Conditioning Contractors' National Association include general business sessions, general activity forums, special activity forums, several social gatherings, and numerous activities for ladies in attendance. The convention will be held May 26-28 at the Statler-Hilton hotel, Boston. Non-members as well as members are invited to attend. Following is a summary of the program, which is subject to modification as details of sessions, forums, speakers and subjects are finalized.

Business Management Forum — According to present plans, this forum will include a study on overhead and profit based upon surveys in SMACNA chapters by a national research agency. In addition, a "guide" to successful operation will be presented, including ratio analyses (assets, debt, profit to net worth; sales to capital; profit to sales; overhead to sales; etc.)

Labor Relations Forum — Speakers will discuss the new labor law, last year's activities of the labor adjustment committee, and NJBSD developments. Results of the 1960 apprentice contest will be announced.

Building for the Future — This forum will include reports on group insurance, profit sharing, estate planning, inter-organization insurance, ownership agreements, etc.

Ventilating and Air Conditioning — A panel will discuss estimating. If possible, a slide presentation on methods and equipment for testing high pressure systems will be developed for showing at

this session. General conditions of a ventilating or air conditioning contract will be reviewed. The high pressure manual committee will preview the forthcoming manual.

In the general business sessions, the nominating committee will present its slate of directors and the convention will elect five directors to serve a term of four years. Amendments to the constitution and by-laws will be acted upon.

Two major social events are being scheduled — a "Pops" concert and a New England clam bake which, weather permitting, will be held on the shore. In addition, luncheons, tours and other events are being planned for the ladies. Sightseeing arrangements are being left to individual members. Because historic Boston offers so much of interest, SMACNA has arranged with the hotel to accept reservations from those members who wish to come early and tour the city or to stay on after the convention has closed.

Oil Heat Service Schools Begin This Month

BOSTON — The Oil Heat Institute of New England is opening Group III of its oil heat service schools on March 21. Locations selected for this year's schools are: Monday nights, Peabody, Mass.; Tuesday nights, Springfield, Mass.; Wednesday nights, Hartford, Conn.; Thursday nights, Bridgeport, Conn.; and Friday nights, Arlington, Mass.

Subjects to be covered include:

(Continued on page 20)



FOR EASIER HANDLING STANDARDIZE 100% ON SOUTHERN FASTENERS

For materials movement that is power-driven, mechanical or manual, it will pay you to standardize 100% on Southern fasteners. Southern Screw's proven, industry-acclaimed pallet system for bulk fastener movement and storage promotes multiple advantages that show up on the profit side of your books.

And there's no extra charge for this Southern service. Your bulk fastener shipments arrive on 36" x 30" two-way entry disposable pallets to which are steel strapped 36 heavy-duty bulk cartons, each 9" x 9" x 6 1/2". Individual cartons are 275# test corrugated board, with telescopic top. Thus you can use each carton at two different production line stations.

Cash in now on these and many other advantages of standardizing 100% on Southern fasteners for more profitable operation. Southern screws are 100% USA-made of finest quality USA materials.

Ask for Southern's new bulk package chart BP-2 when you send your order or inquiry to Southern Screw Company, P. O. Box 1360, Statesville, N. C.

Manufacturing and Main Stock in Statesville, North Carolina
Warehouses: New York • Chicago • Dallas • Los Angeles
Machine Screws & Nuts • Tapping Screws • Wood Screws • Stave Bolts • Drive Screws • Hanger Bolts • Carriage Bolts • Dowel Screws



WHAT'S HAPPENING . . .

(Continued)

NHAW Plans Convention Program And Post-Meeting Trip to Mexico

COLUMBUS, O. — Panel sessions on management techniques and profit-making possibilities will be featured at the forthcoming convention of the Northamerican Heating and Airconditioning Wholesalers' Association, according to Wilbur R. Bull, executive director of the association. Following is a tentative program for the convention, which will be held May 1-3 at the Roosevelt Hotel, New Orleans:

May 1

- 11:00 a.m. Registration
- 6:30 p.m. Social hour and reception

May 2

- 9:30 a.m. Committee meetings
- 12:00 noon Luncheon
- 2:00 p.m. Management workshop session. Information important to the successful operation of a wholesale business will be presented.

Evening Left free for a walking tour of the Old French Quarter. Special guided bus tours will also be available.

May 3

- 8:30 a.m. Membership breakfast and general business meeting
- 10:00 a.m. Management workshop session. Case histories of successful wholesaler operations will be presented.
- 12:00 noon Luncheon
- 1:30 p.m. Association golf tournament
- 2:30 p.m. Guided tour on the Mississippi River
- 6:30 p.m. Social hour
- 7:30 p.m. Banquet, followed by entertainment and dancing

The association is also planning a post-convention meeting with air conditioning industry people in Mexico City, a tour of the city and its environs, and a sightseeing trip to Acapulco. According to present plans, those who make the trip to Mexico will have an extra day in New Orleans, will leave for Mexico City on May 5, and return home on May 11. Members are welcome to invite friends and neighbors to make the trip with them, Mr. Bull states.

Tentative plans call for visits to numerous points of interest including the national palace in Mexico City, Capultepec park and castle, the Dolores flower market, the pyramid of Cuicuilco and the

(Continued on page 24)

OHI Begins Group 3 Of Service Schools

(Continued from page 19)

Troubleshooting Warm Air Installations, by Robert Whitbourne, representing Delco Appliance Div., General Motors Corp.; Servicing Domestic Controls, by George T. Hobby and Ralph Cobb, General Controls Co.; Servicing Rotary Oil Burners, by Duane W. Rouse and Lester Clough, Toridheet Div., Cleveland Steel Products Corp.; Shell Head Type Burners, by Stanley C. Paterson, representing the Waltham Oil Burner Co., Inc.; Low Pressure Burners, by E. W. Garrison, representing the Winkler division of Stewart-Warner Corp.; and Fuel Oil Pumps, by James R. Holmin, service manager, Sundstrand Hydraulics.

In charge of the program is Hollis L. Farrow, Director of Education, Oil Heat Institute of New England, 839 Beacon St., Boston 15, Mass.

MEMO

TO: Ted Coon, District Manager
St. Louis Territory:

Ted:
Here's the Welbilt story that's attracting distributors all over the country. New subsidiary, old hands, good facilities, on the move... definitely the line to watch. A solid line - complete, guaranteed, backed by technical experts. No "fast buck" stuff... we're here to stay. Clean-cut marketing policy, protection for all resale groups, plenty of technical and promotional assistance... a high profit line for both dealers and distributors. Particularly promising items illustrated. That's the story thus far... a very solid one for my money. Glad you're with us. Will keep in touch.

Pete Dalton



WELBILT Self-Contained Air Conditioners. Commercial & Residential; 3 thru 20 Tons; Air or Water Cooled. Four Models.



WELBILT Series VGF Gas-Fired Hi-Boy Furnaces. Residential & Small Commercial; 6M to 120M BTU Output.



WELBILT Heat Pump



WELBILT Prime White Baseboard Radiation Units



WELBILT Packaged Chillers



WELBILT Attic Stowaway Air Conditioners

America's newest line of high-quality Air Conditioning, Refrigerating and Heating Equipment. Illustrated Catalogs on request.

SELF-CONTAINED AIR CONDITIONERS • HEAT PUMPS • AIR AND WATER COOLED CONDENSING UNITS • WATER AND AIR COOLED PACKAGED CHILLERS • COOLING TOWERS • EVAPORATOR CONDENSERS • GAS FIRED HI-BOY FURNACES • GAS FIRED HORIZONTAL FORCED AIR FURNACES • GAS FIRED BOILER UNITS • CLOVERDALE HOT WATER BOILERS • RESIDENTIAL OIL FIRED BOILER BURNER UNITS • COMMERCIAL OIL FIRED BOILER BURNER UNITS • COUNTERFLO, SUSPENDED, HI AND LO-BAY OIL FIRED WINTER AIR CONDITIONERS • COMBINATION HEATING AND AIR CONDITIONING UNITS • UNIT HEATERS • DUCT HEATERS • RESIDENTIAL RADIATION BASEBOARD

Welbilt AIR CONDITIONING and HEATING CORP.

SUBSIDIARY OF WELBILT CORPORATION

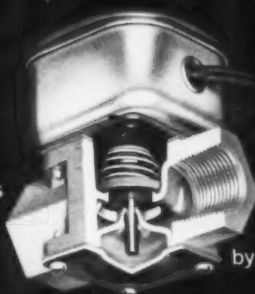
Farmingdale, New Jersey

FOR
COMPLETELY
DEPENDABLE
HEATING
CONTROLS...

**McQUAY-
NORRIS**

SOLENOID VALVES

The famous
McQuay-Norris
spring-loaded
soft-seat
Solenoid valve



NOTE:
Spring-loaded
soft-seat valves
were originated
by McQUAY-NORRIS

McQuay-Norris spring loaded soft-seat valves are A. G. A. and UL listed for natural, manufactured, and LP gas. Stainless steel working parts. Aluminum die-cast valve body. Special formula Buna N soft seat. Use McQuay-Norris valves with confidence.

McQUAY-NORRIS MANUFACTURING CO.
ELECTRIC PRODUCTS DIVISION, ST. LOUIS 16, MO.
50 years in the manufacture of precision products



if it's
newer
and
better
it's
Luxaire
for
1960!

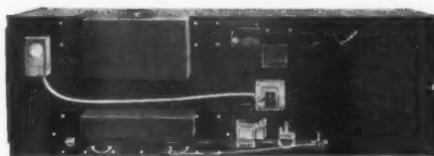
If you are installing
Gas Units — or Oil Units —
you are sure to appreciate and find profit-
able Luxaire's step-ahead developments for 1960.
All along the complete Luxaire line, the most wanted
sizes and models are equipped with large-
capacity blowers that make conversion for summer cooling
easy and inexpensive.

With Gas Furnaces, Luxaire offers a complete new series
of Horizontal Units that are low and compact, are available
with increased air deliveries and are priced to
meet any competition.

Two, new, big sizes increase the capacities available in the
popular assembled and wired Luxaire Gas Upflow
Units to 175,000 and 200,000 Btu input, complete in one
compact cabinet.

For Oil, Luxaire offers three new 1960 models of
Horizontal Furnaces and three sizes of Winter
Air Conditioning Units, with the quietness
of round combustion chambers and
refractory fireboxes, and having increased
blower capacities.

If you have been seeking excellence but
need to be competitive, see your
Luxaire jobber for his
1960 prices, today!



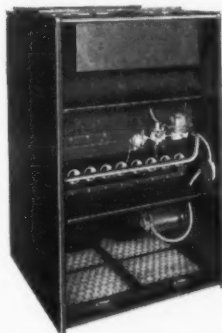
New! Low and
Compact Horizontal Furnaces.
4 Sizes



New! Slender and
Compact Horizontal
Units. 4 Sizes

**NEW
GAS A.C. UNITS**

Heavily constructed 16
Gauge Heating Elements
and 21 Gauge Cabinets!
Completely assembled
and wired! Large air han-
dling capacities!



New! 175,000 or
200,000 Btu — A Single,
Compact Package

**NEW
OIL A.C. UNITS**

Quiet operation with
cylindrical Combustion
Chambers and Refractory
Fireboxes! Completely as-
sembled and wired Up-
flow, Basement and
Counterflow Units!



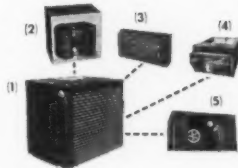
New Assembled and Wired A. C.
Units. Shown with Vestibule
and Hinged Door



Gas Fired
Unit Heaters,
5 Models



Gas
Conversion
Burners



(1) 2, 3, 4, 5 H.P. Air
Cooled Condensing
Units, (2) Plenum
Evaporator, (3) Duct
Evaporator,
(4) Counterflow
Evaporator, (5) Blower-
Evaporator Unit.



Year 'Round
Combination
Units, Air
or Water
Cooled, Gas
or Oil Fired



Winter Air
Conditioners
Gas Fired
or Oil Fired

THE C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO
Luxaire HEATING & AIR CONDITIONING UNITS

WHAT'S HAPPENING . . .

(Continued from page 20)

Present Results of Research At ASHRAE Meeting

NEW YORK CITY — The semi-annual meeting of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, held recently in Dallas, included four technical sessions and three symposiums. Papers presented at the technical sessions included:

Noise Reduction Characteristics of Package Attenuators for Air-Conditioning Systems. Presents data based on measured characteristics of about 20 commercially available packaged noise reducers.

Attenuation and Generation of Sound in Elbows with Turning Vanes. Gives information which can be applied in predicting the acoustic performance of duct systems.

Draft Performance of Chimneys. Reports results obtained with a full size masonry chimney and compares them with previous data and with calculations based on model tests.

Effect of Compressor Characteristics on Motor Performance. Presents a theory to explain why different types of loads result in different power factors for the

same motor.

Solar Heat Gain Factors for Windows with Drapes. Covers a laboratory investigation of window drapes of several types and colors when subjected to solar radiation.

A Rational Method of Determining Summer Weather Design Data. Includes a demonstration that shows separate establishment of design wet and dry bulb temperatures yields the same probability as if the values are set on a combined basis.

Sensation Responses to Temperature and Humidity Under Still Air Conditions in the Comfort Range. Reports environment studies made at the ASHRAE laboratory.

Proposed Humidity Standards. Discusses the nature of the problems of calibrating humidity sensing devices.

New Standard Covers Gas-Fired Air Conditioners

NEW YORK CITY — A new standard covering gas-fired summer air conditioners has been approved by the American Standards Association and published by the American Gas Association. Titled American Standard Approval Requirements for Gas-Fired Air Conditioning Appliances, Z21.40-1959, it is now available at \$2 a copy.

The American Standards Association also reports that a number of American Standard approval requirements for gas equipment, including the requirements for gravity and fan type floor furnaces, have been revised effective January 1, 1960. New addenda which became effective January 1 include those relating to requirements for gravity and forced air central furnaces and to gravity and fan type vented recessed heaters.

NAHB Cites Size, Variety of Markets Created by Each 100,000 New Homes

WASHINGTON, D. C. — According to estimates made by the National Association of Home Builders, each 100,000 new homes creates markets for 73,000 warm air heating systems and 7000 air conditioners. In addition, it is estimated that each 100,000 homes built in 1960 will use 140 million sq ft of wall and ceiling insulation, 95,000 water heaters and 55,000 kitchen exhaust fans.

According to preliminary estimates of the Bureau of the Census, U.S. Department of Commerce, December nonfarm housing starts totaled 82,300 (both privately and publicly owned units). The 81,700

privately owned dwelling units were 10 percent below November, a much less than normal seasonal decrease. They represented a seasonally adjusted annual rate of 1,310,000, up 8 percent from the estimated rate for November. By the end of December 1959, a total of 1,376,900 new private and public dwelling units had been put under construction, an advance of 14 percent over 1958, and almost equal to the record total of 1,396,000 in 1950. The private total for 1959 (1,341,500 units) exceeded by 200,000 units the 1958 private total.

(More news on page 26)

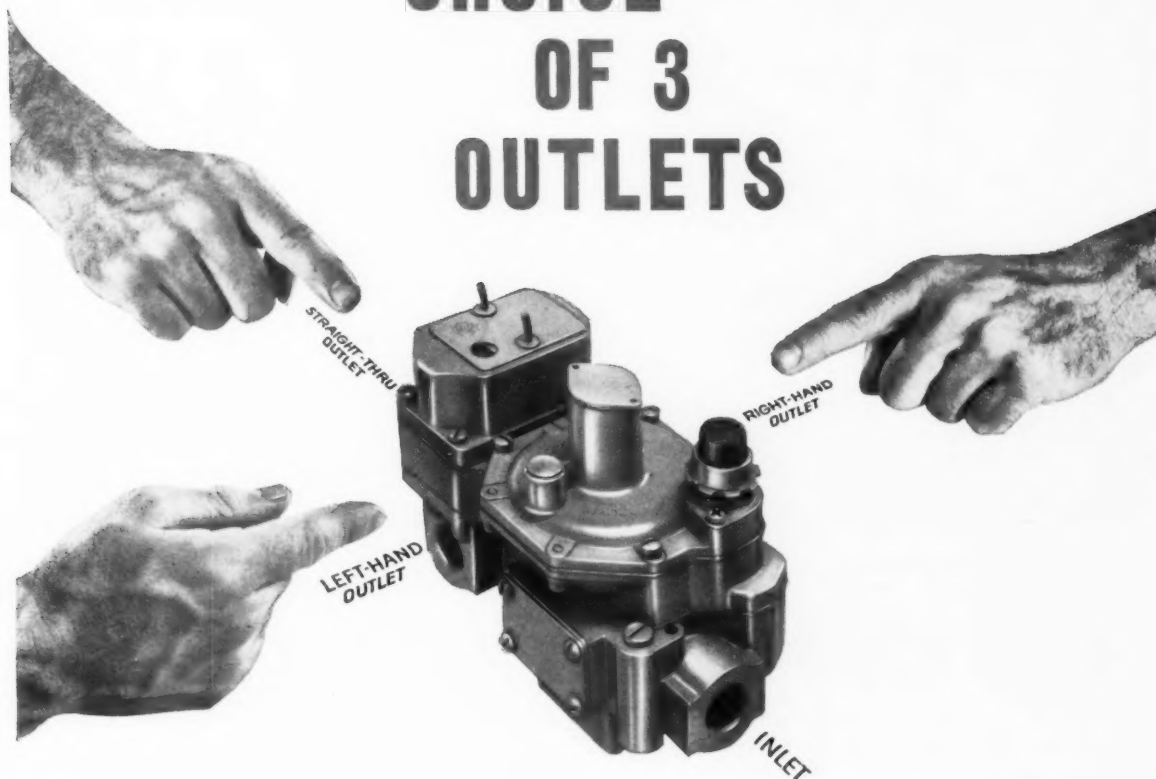
Plan Post-Convention Trip to Mexico

(Continued from page 20)

gardens of Xochimilco. A trip to Guernavaca will permit visitors to see the resort of Maximilian and Carlotta and the cathedral built in 1531 by Cortez. The tour to the popular seaport town of Acapulco will be made by private motor car. Here visitors will have an opportunity to enjoy the famous beaches, take a sail boat tour, or arrange to observe the ocean floor in glass bottomed boats.

ONLY A-P'S SERIES 5250 GAS VALVE GIVES YOU A

CHOICE OF 3 OUTLETS



If you make a furnace or unit heater in the 60,000 to 188,000 btu class, you ought to consider the A-P Series 5250 gas control. For one thing, it's so flexible — a choice of 3 outlets adapts it to your requirements regardless of vestibule design. Features like this put the 5250 in a class by itself. Not surprising when you consider that A-P pioneered the first combination gas control way back in 1949.

The 5250 is tops in operational dependability, too! Built-in pressure regulator, 100% safe shutoff, safe lighting, electro-magnetic thermostatic operator, thermo-magnetic safety pilot — all these make your unit more competitive... your customer more comfortable.

Write for Bulletin G-182. Or make an appointment with an A-P field man. No obligation, of course.



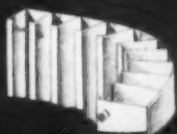
Creative Controls for industry

CONTROLS COMPANY OF AMERICA

HEATING AND AIR CONDITIONING DIVISION

2452 N. 32nd Street, Milwaukee 10, Wis. • Cooksville, Ontario • Postfach 313, Zug, Switzerland

Does Your Present Line Offer These Advantages?



Fins—Here's Victor's big gun. Fuel saving fins cut fuel bills 30%. It's a Victor exclusive and loaded with sales appeal.

USS Cor-Ten®—Victor's heat exchanger is fabricated from USS Cor-Ten steel. Gives 3 to 4 times the life of ordinary steel.



CryCoat® — Victor finishes look better, last longer. Cry-Coat phosphate coating locks paint to the metal, seals out corrosion.

Warranty — Victor provides a 20-year warranty on its heat exchanger . . . long guarantee is convincing proof of Victor's high quality.



Do You Have The Tools To Prove Quality, Economy?



Demonstrator — In 5 minutes customers are convinced of Victor's fuel-saver economy as they see the thermometer in the side with the "fins" rise dramatically.

Flip Chart — This colorful flip chart tells the convincing Victor story. Holds your customer's attention . . . points out the many good reasons why Victor is best.



build bigger profits

GO VICTOR

Once a Victor dealer sells the Victor heating concept, he's closed the sale. Why? Because no other furnace has all the important features which Victor offers. If you've been cutting prices to make a sale it's time for you to go Victor. Victor offers the ammunition that enables you to sell quality at a respectable profit . . . and price.



Get details now during Victor's

DISCOUNT CARNIVAL

It's your opportunity to earn big profits two ways! First, by selling the quality Victor line. Second, by receiving valuable prizes for each furnace you order through May 31, 1960. Why don't you cash in? Write today for full information.

HALL-NEAL FURNACE COMPANY

1322-42 N. CAPITOL AVE., INDIANAPOLIS 7, INDIANA

WHAT'S HAPPENING . . .

Issue New Directory Of Certified Unitary Air Conditioners

WASHINGTON, D.C. — The Air-Conditioning and Refrigeration Institute recently issued the first 1960 Directory of Certified Unitary Air Conditioners, in which some 1995 models of about 50 participating manufacturers are listed.

The directory is being distributed, as were its predecessors in 1959, to dealer-contractors throughout the country, to architects and consulting engineers and to government personnel concerned with air conditioning at national, state and local levels. It is also available to the public through the dealer-contractor outlets of manufacturers participating in the ARI Unitary Air Conditioner Certification Program. The program is based on firm, enforceable contracts between participants and ARI, under which the seal of certification may be withdrawn if equipment does not meet the claimed ratings.

A pattern for routine random testing of units has been established by the institute, under which at least four units are tested every month.

While the program at this time covers only unitary air conditioners up to 135,000 Btu/h capacity, it is expected that heat pumps within the same range may be included in it some time this year or early in 1961, according to ARI officials.

Continuing promotion of the program through advertising and publicity has been authorized by participating companies, and as one phase of this, the National Association of Manufacturers is preparing a film for use on TV stations outlining the program and the benefits of air conditioning generally. This film will also be available to the industry for showings to service clubs, technical groups, etc.

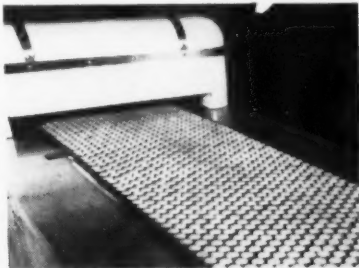
**In bowling alleys and banks,
bakeries and beauty parlors...** You'll find



The popularity of bowling has increased so sharply in recent years that today more Americans actively participate in bowling than in any other indoor sport. Air-conditioned alleys have made it possible for bowlers to enjoy the game the year round.



Air-conditioning is a "must" inside bank vaults, museum and library storage rooms and other areas where, for security reasons, there are no windows or little air circulation. Precise control of temperature and humidity also protects important records against atmospheric variations.



Modern baking is a highly mechanized operation—far removed from grandma's oven. In this photo, crackers pour from the delivery end of an automated travelling oven. Air-conditioning is used in large commercial bakeries today to control temperature and humidity and for employee comfort.

genetron[®] **SUPER-DRY** **REFRIGERANTS**

*Approved! Accepted!
Preferred!*

In thousands of applications, you'll find "Genetron" refrigerants filling the air-conditioning and refrigeration needs of modern America. "Genetron" refrigerants offer unexcelled purity and dryness... and their strict quality specifications are consistently *bettered* in production. Leading equipment manufacturers, refrigeration engineers and air-conditioning and refrigeration wholesalers approve, specify and recommend them. They know they can always count on "Genetrons" for dependable, trouble-free service.

"Genetron" Super-Dry Refrigerants are available from wholesalers everywhere, coast to coast. See your wholesaler. Insist on "Genetron"!

genetron 11 ORANGE LABEL CCl_3F
TRICHLOROMONOFUOROMETHANE

genetron 12 WHITE LABEL CCl_2F_2
DICHLORODIFLUOROMETHANE

genetron 22 GREEN LABEL CHClF_2
MONOCHLORODIFLUOROMETHANE

genetron 113 PURPLE LABEL $\text{C}_2\text{Cl}_3\text{F}_3$
TRICHLOROTRIFLUOROETHANE

genetron 114a BLUE LABEL $\text{C}_2\text{Cl}_2\text{F}_4$
DICHLOROTETRAFLUOROETHANE



It gets pretty hot under a hair dryer—even with air-conditioning. And the girls like to enjoy having their hair done. That's why so many beauty parlors are so well air-conditioned. It benefits customers... employees... and owners!

GENERAL CHEMICAL DIVISION

40 Rector Street, New York 6, N.Y.

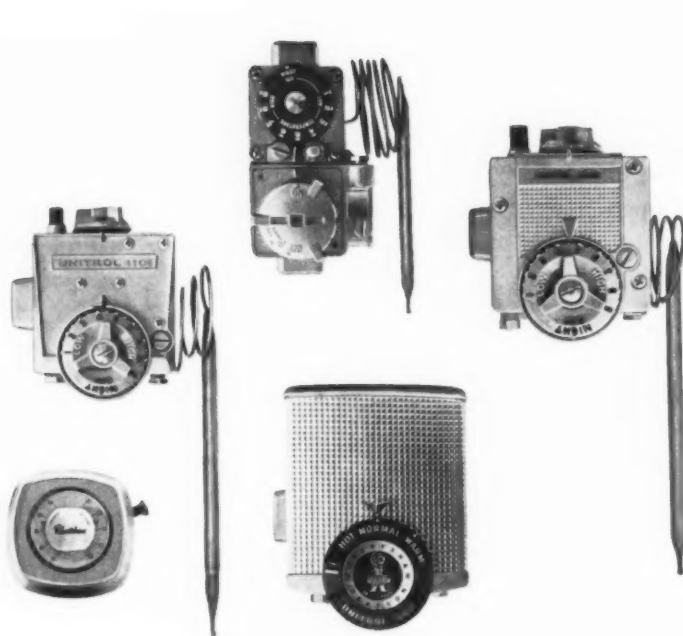




This year,
as in the past,
the newest
Control ideas
and developments
will come from
Robertshaw...
watch for them

Robertshaw 

GRAYSON CONTROLS DIVISION • ROBERTSHAW-FULTON CONTROLS COMPANY
LONG BEACH 5, CALIFORNIA



WATER HEATER CONTROLS

Unitrol 110
Unitrol 200
Unitrol 400
Unitrol 110R
Unitrol 200R
Unitrol 400R
Pilots and Thermocouples

SPACE HEATER CONTROLS

Unitrol 110S
Unitrol 110SR
Unitrol 1000
Pilots and Thermocouples

CENTRAL HEATING CONTROLS

Wall Thermostats
Fan and Limit Switches



*Comfortable living for them, **MORE MONEY for YOU***

*Install low-cost **GM DELCO** heating-cooling*

There are units to fit *any* heating system, new or old.

- Cut costs—use same ducts for heating *and* cooling.
- Save space—choice of cooling coil sizes to stack on any furnace . . . up-flow, down-flow or horizontal.
- Remote condenser is weatherproofed for exterior installation.
- Complete blower-and-coil packages for hot water and steam systems.
- Quality assurance . . . national-brand acceptance . . . backed by General Motors reputation.

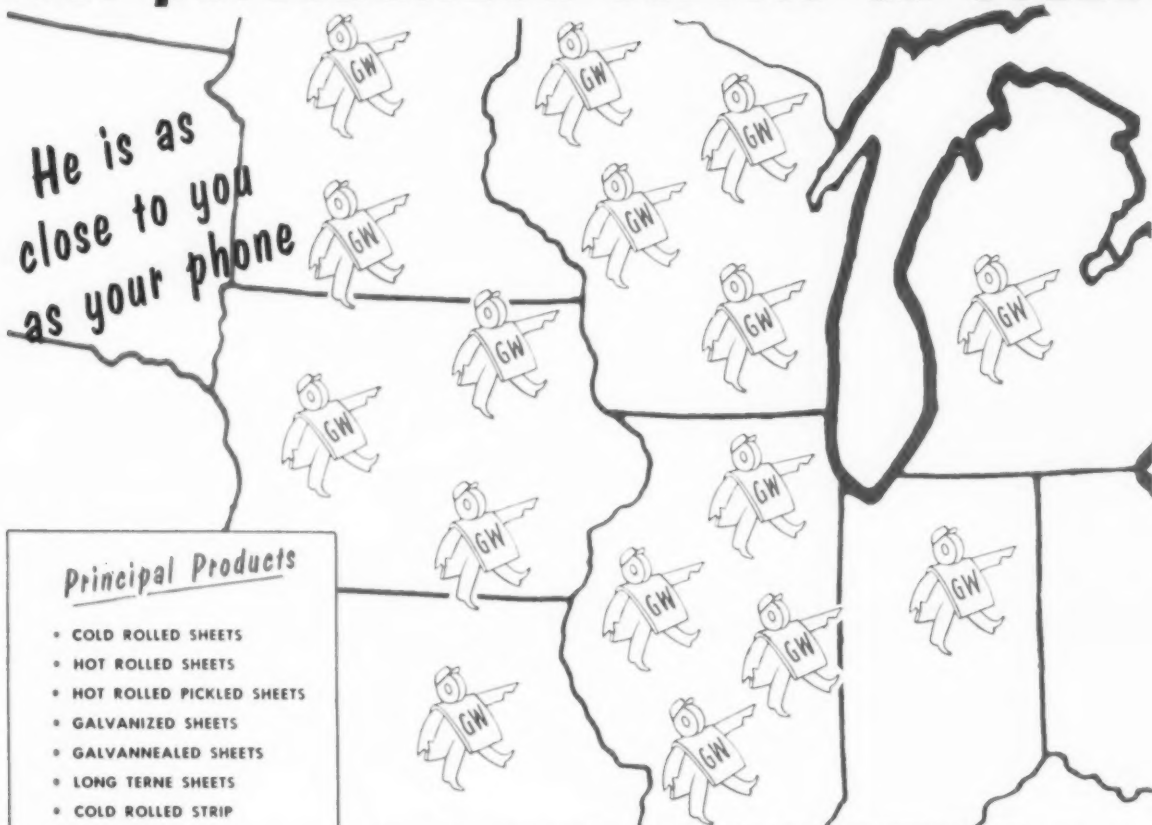
Find out more about how you can profit with easy, low-cost Delco installations.

Get the facts on the complete Delco line of Air Conditioning . . . and Heating. Write, wire or phone for full details.



DELCO APPLIANCE DIVISION
GENERAL MOTORS CORPORATION
Rochester 1, N. Y.

Call in the Man from GREAT WESTERN for fast personalized service on STEEL



He is as
close to you
as your phone

Principal Products

- COLD ROLLED SHEETS
- HOT ROLLED SHEETS
- HOT ROLLED PICKLED SHEETS
- GALVANIZED SHEETS
- GALVANNEALED SHEETS
- LONG TERNE SHEETS
- COLD ROLLED STRIP
- HOT ROLLED STRIP
- HOT ROLLED PICKLED STRIP
- GALVANIZED STRIP

In addition to the above
the MILWAUKEE plant carries:

- HOT ROLLED BARS
- BAR SHAPES
- STRUCTURALS
- FLOOR PLATES
- PLATES

Throughout the middle-west, men of GREAT WESTERN STEEL are providing fast personalized service on STEEL.

In addition to supplying you with quality steel at a fair price, engineering counsel and know-how, they will tell you how to make GREAT WESTERN STEEL a part of your manufacturing organization . . . how to cut your inventory and production costs by taking advantage of GREAT WESTERN'S large stocks of steel on hand for immediate delivery.

Plan now to make GREAT WESTERN a part of your production team.
Call in the man from GREAT WESTERN today!

CHICAGO *Call* HEmlock 4-5800
MILWAUKEE *Call* HIlItop 4-3092



**GREAT WESTERN
STEEL COMPANY**
ESTABLISHED 1918

General Office and Plant:
2300 W. 58th St., CHICAGO 36, HE 4-5800
MILWAUKEE Plant: 2475 W. Hampton Ave., Hilltop 4-3092
REPRESENTATIVES IN PRINCIPAL MIDWESTERN CITIES



NOW!

BIG SHEAR FEATURES IN A LOWER PRICED LINE

Economical to buy *and operate!* Hairline accuracy! Split second action (85 cuts per minute)! Smooth, lively, full of pep and power! You're looking at the Niagara Series One . . . the thrifty line for work up to 10 gage, 10 feet.

And what a line-up of "big shear" features . . .

INSTANT ENGAGING CLUTCH: Famous Niagara 14 point, multiple jaw sleeve design for uniform timing and rhythmic shear operation.

HI-POWER DRIVE: Completely enclosed . . . clutch, gearing and flywheel operate on anti-friction bearings in a bath of oil.

DIRECT CONNECTED MOTOR: High torque, pancake type. No belts, sheaves, nor belt guards.

RUGGED, WELDED STEEL: Bed, holddown, crosshead, housing legs . . . for utmost strength and rigidity.

CLOSED BOX SECTION: Bed and crosshead. Horizontal, vertical and torsional stresses resisted with minimum deflection.

AUTOMATIC HOLDDOWN: Self-compensating. Applies instant, uniform pressure, holding sheet flat and tight against bed.

PRECISION GAGING: For micrometer accuracy. Easily adjusted.

LAMINATED, NON-METALLIC WAYS: Adjustable. Guide crosshead accurately.

4-EDGE KNIVES: Quadruple service between regrinds. Heat treated, flush-faced.

THERE'S MORE — get the *complete* description. See why you're losing money by waiting. Request Bulletin 73 now . . . today!

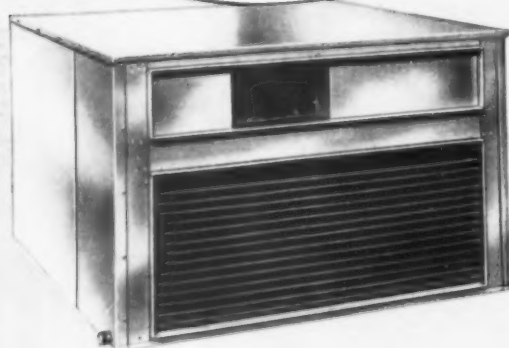


cost-cutting **NIAGARA** power squaring shears for sheet metal work

NIAGARA MACHINE & TOOL WORKS • BUFFALO 11, N. Y. • District Offices and Distributors Everywhere

Now YORK Goes "Twin System" Across the Board!

NEW Twin-Line
Air Conditioner



NEW Twin-System
Heat Pump



YORK
Blue Chip
Dividend for '60



EXCLUSIVE *Pledge of Performance*

Offers the most rewarding
sales and profit opportunities
in air conditioning today!

Gives You More to Sell More to Tell in 1960!

You've already enjoyed the sales wallop of selling York Twin-System central air conditioners against single systems! Now comes a York Twin-System heat pump for central heating and cooling! That means 2 separate cooling systems *plus* 2 separate heating systems! One system operates under normal conditions; the second swings into action automatically under extreme conditions. You can stress fact that customers pay only for the cooling or heating they need...save 15% or more on operating costs.

York Puts More Into Every Unit, So You Get More Out of It!

YORK

YORK CORP., SUBSIDIARY OF BORG-WARNER CORP.



BORG-WARNER
RESEARCH & ENGINEERING
MAKE IT BETTER

Air Conditioning, Heating, Refrigeration and Ice-Making Equipment •
Products for Home, Commercial and Industrial Installations

MAIL COUPON

General Sales Manager
Packaged Products Div.
York Corporation
York, Pennsylvania

AA-3

I'm interested! Send me full details on 1960 York
Twin-System Residential Units and new Blue Chip
Pledge of Performance.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



Century motors circulate warm air

Century motors are helping circulate warm air in hundreds of thousands of domestic furnace systems like the one shown here. Why are Century furnace blower motors so popular? The answer is simple . . . quiet and dependable operation. You make fewer nuisance service calls. You make more profit on each job with Century motors.

Here are some of the features that help make this record possible:

FOR DEPENDABILITY: Insulation consists of heavy "Mylar" slot cells and high temperature baking varnish . . . combination gives high mechanical and electrical strength. Lubricating method is designed to withstand warm air furnace operating conditions. And other features like the trouble-free governor and automatic thermal overload protection increase dependability.

FOR QUIET OPERATION: A cushion base with resilient rings reduces transmission of sound vibrations . . . dynamically balanced rotor gives smooth operation . . . sleeve bearings with shaft floating on film of oil means belt can be pulled up without bearing rumble . . . all contribute to quiet operation of Century furnace blower motors.

FOR MORE INFORMATION: contact your nearest Century Electric Sales Office or Authorized Distributor.

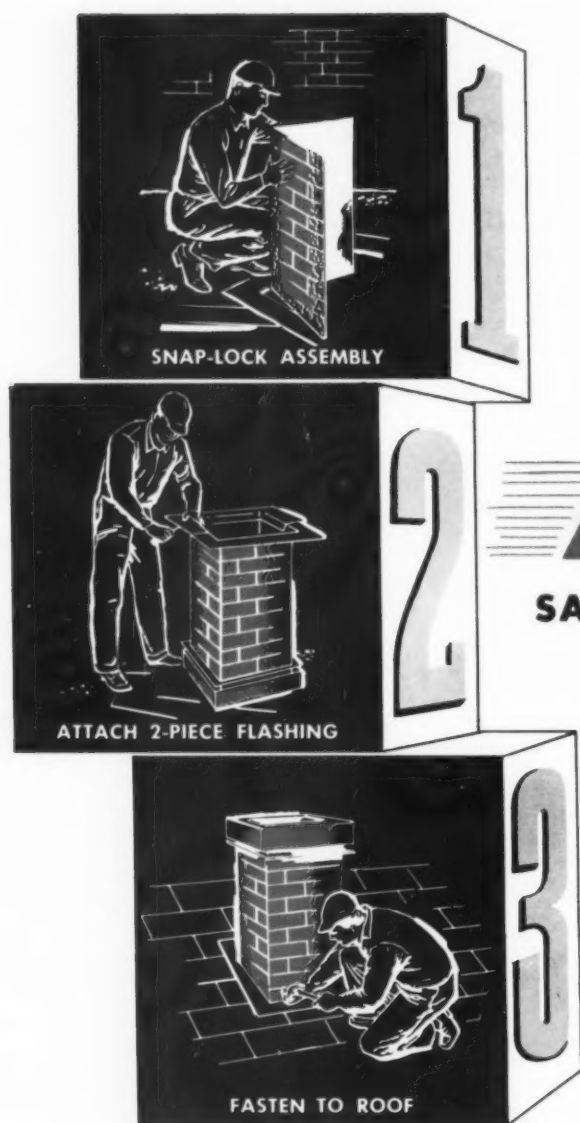


Century Electric 48-frame cushion base motor for furnace blowers. Also available: two-speed motors for combination heating-air conditioning units; and 56-frame motors when 1/2-horsepower capacity and larger is required.

CENTURY ELECTRIC COMPANY

St. Louis 3, Missouri Offices and Stock Points in Principal Cities

Century
60-8



AIR-JET[®]

SAVES INSTALLATION TIME

Save time, money
and headaches with the
precision-made
AIR-JET
all fuel chimney!

IMPROVED TWO-PIECE FLASHING requires no wood collar on roof. Attach flashing to housing on the ground . . . quickly, simply. Then lift entire unit into place . . . fasten to roof . . . job's done!

SNAP-LOCK ASSEMBLY of Air-Jet knocked-down housings makes it simple and easy to assemble in minutes! No nuts, bolts, screws or tools needed! Side panels have snap locks—no awkward, sliding joints.

EXTENDED SMOKE DEFLECTOR GUARDS AGAINST SOOTING! Special top design guards against rain, snow, downdrafts, nesting birds.

ADD PRESTIGE AND VALUE WITH AIR-JET DECORATIVE CHIMNEY HOUSINGS! 8 smart designs to choose from! UL approved. FHA and VA accepted.

See Your Air-Jet Wholesaler or Write For Free Brochure Giving Complete Information.



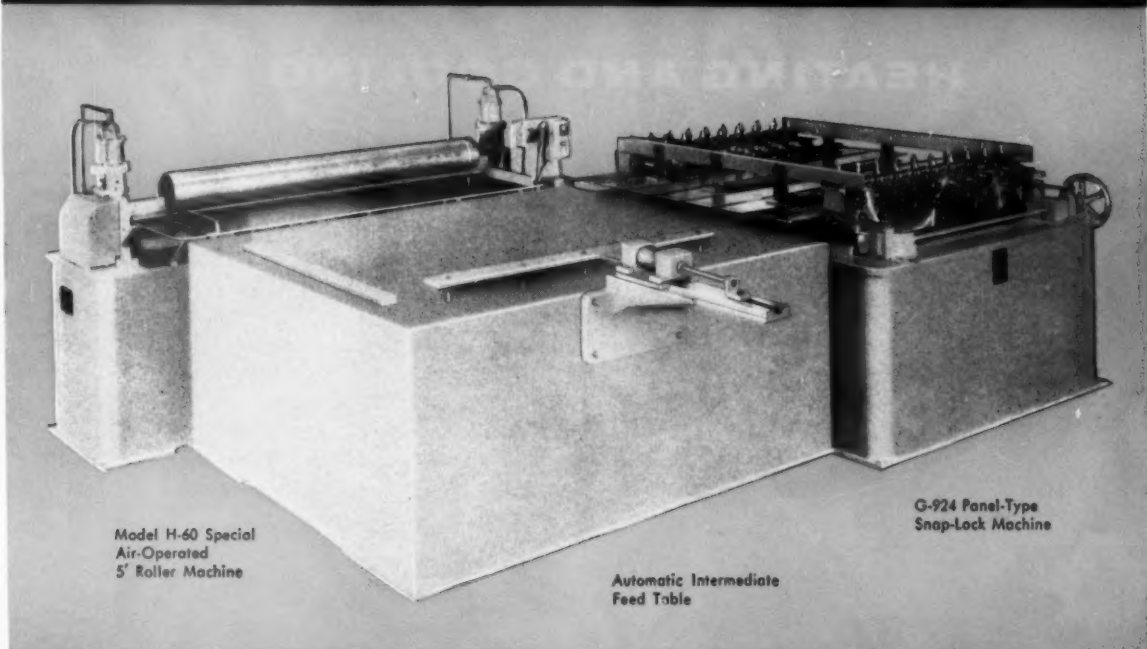
GENERAL PRODUCTS COMPANY, INC.

DEPT. O-1 FREDERICKSBURG, VIRGINIA

Pipe and Duct manufacturers:

CUT FABRICATING COSTS!

WITH **NEW MAPLEWOOD** AUTOMATIC INTERMEDIATE FEED TABLE



Model H-60 Special
Air-Operated
5' Roller Machine

Automatic Intermediate
Feed Table

G-924 Panel-Type
Snap-Lock Machine

Produce more pipe and duct sections per hour through less handling and automatic transfer of panels... Operate Snap-Lock and Roller Machines at maximum high speeds...

This new intermediate table automatically transfers panels from the snap-lock machine to the roller machine, and makes possible snap-lock forming, rolling, beading and crimping in one continuous high-speed automatic operation.

The G-924 Panel Snap-Lock Machine is now equipped with a micrometer dial-type upper-spindle adjustment

for more easily changing from one gauge to another. The roll shafts also have thrust bearings, assuring uniform sections at all times.

When combined as a single production unit, these three machines offer the finest production equipment for increasing output and cutting costs in the fabrication of pipe and duct sections.

MAPLEWOOD
RMT
ROLL FORMING MACHINES

DIVISION OF ROCKFORD MACHINE TOOL CO.
2500 KISHWAUKEE STREET ROCKFORD, ILL.

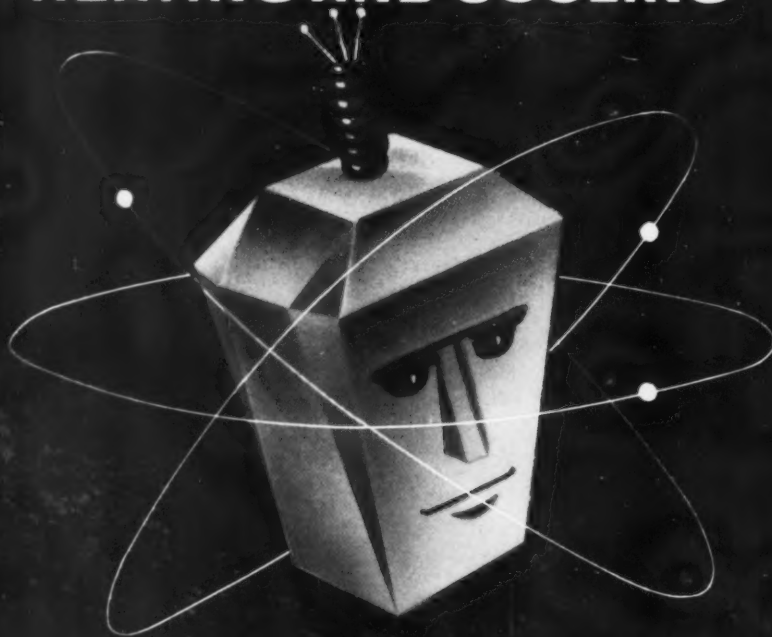
Call a Maplewood engineer for full details on the combination, and have him propose a plan for streamlining your operations with greatly reduced costs. No obligation, of course.

COMPLETE LINE OF ROLL FORMING, CUT-OFF MACHINERY

WILLIAMSON

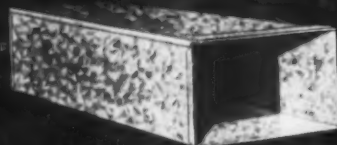
"Magic Brain"

HEATING AND COOLING

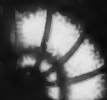


....works "Magic" for your sales!

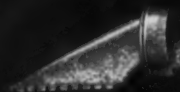
Seal-Tite DUCT, PIPE & FITTINGS



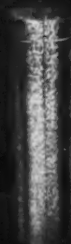
K. D. Rectangular Duct



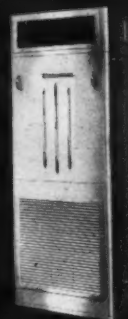
Adjustable Elbow



Top Take-Off



Snap-Lock Round Pipe



Space Console Unit

AIR

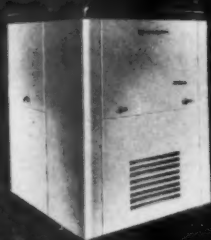
WARM AIR FURNACES



Special Series — Gas and Oil

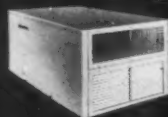


De Luxe Series — Gas

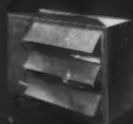


De Luxe Series — Oil

CONDITIONING UNITS



Self-Contained Unit
(cooling and condensing coils in one casing)



Air-Cooled Condensing Unit

THE INDUSTRY'S MOST COMPLETE LINE and THE INDUSTRY'S MOST UNIQUE SYMBOL

will help you make more
heating and cooling sales



WARM AIR FURNACES ... to
fit any price range for the home owner
or the builder.



AIR CONDITIONING UNITS ...
to fit practically any residential or
light commercial need.



**Seal-Tite^{*} DUCT, PIPE AND FIT-
TINGS** ... to assure complete "magic
comfort" with "Magic Brain" equip-
ment!



NATIONALLY ADVERTISED to
home owners and builders. Complete
assortment of free literature, bro-
chures, sales aids and tested selling
plans.



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* T.M. Pat. Pend.

THE WILLIAMSON COMPANY
3310-R-3 Madison Road • Cincinnati 9, Ohio

Gentlemen:

Rush me information on your "MAGIC BRAIN" line of:

___ Heating Equipment ___ Cooling Equipment
___ "Seal-Tite" Duct, Pipe & Fittings

Name _____ Title _____

Firm _____

Address _____

City _____ Zone _____ State _____

Despite rough winter weather, Chicago-area sheet metal contractor reports:

"NO CALL BACKS ON MY ALCOA

"Here, in the highest priced labor market in the country, time really *is* money to the small applicator like me! I can't afford call backs, and I haven't had any on my Alcoa jobs," says Gene Miller, president, Griffith Sheet Metal Company, Griffith, Ind.

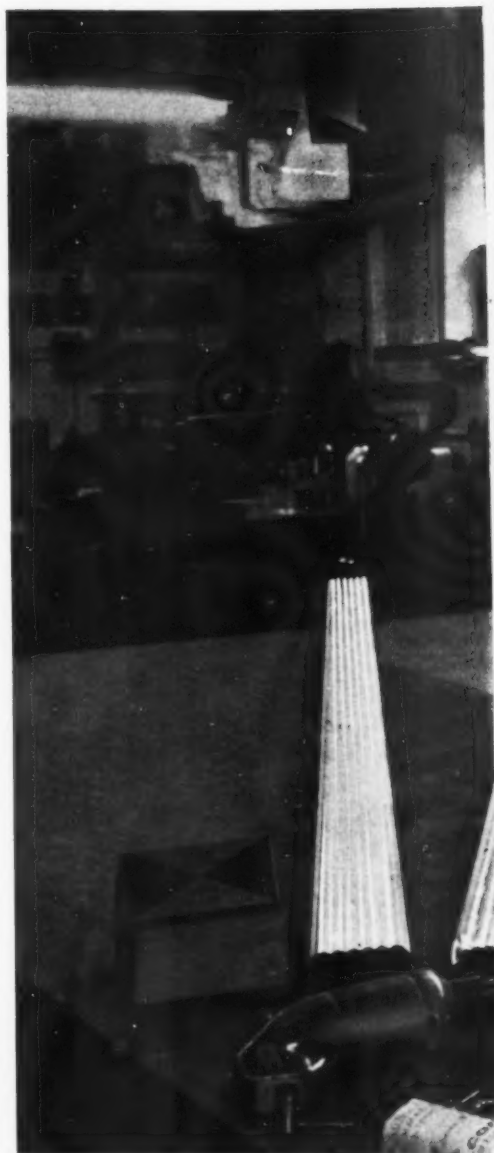
"Alcoa's heavy, .032 gage aluminum is 20 per cent thicker—the only ready-made aluminum system I've seen that's strong enough to take the ice and snow of our Chicago-area winters. Lightweight Alcoa Aluminum Gutters and Downspouts are easy to measure and fit right on the job, save us *more* time and money!

"Free-floating hangers of the Alcoa system allow gutters to expand and contract. Even on new homes where lumber is still green, wood warping can't pull a section apart. And the Alcoa joining system is simple, effective. Just lay on the waterproofing gutter seal, cinch up the 'pop' rivets, and you get permanent joints *without* soldering.

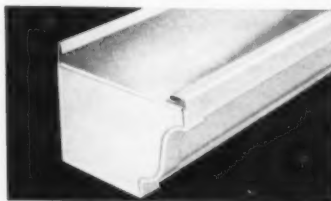
"I can get two-hour delivery on Alcoa's full line of gutters, downspouts and all accessories from the G. W. Berkheimer Company, my local Alcoa distributor, in Gary, Ind. Alcoa helps me sell, too. I have the hard-selling counter display and use Alcoa's free mat service. My own ads in the local shopper's guide really pull, I know. When folks inquire about my aluminum gutters, they always ask for Alcoa by name."

All over the country, builders and homeowners are finding out about the extra quality built into Care-free gutter and downspout systems of Alcoa® Aluminum . . . that the famous Alcoa label stands for extra value. Learn how *you* can cash in! Call your nearest Alcoa sales office today, or mail coupon below to: Aluminum Company of America, 1892-C Alcoa Building, Pittsburgh 19, Pa.

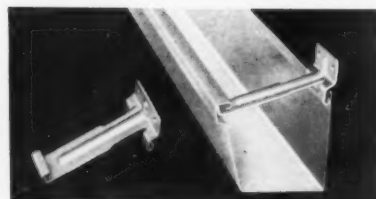
PRECISION MANUFACTURING to close tolerances means Alcoa systems assemble easily, stay tight and leakproof. Standard 16-ft lengths need fewer joints, install faster.



"THIS DISPLAY shows the homeowner how an Alcoa system goes together, lets him see its thickness and test its strength for himself," says Mr. Miller, showing the Alcoa counter display to Lee Turner.

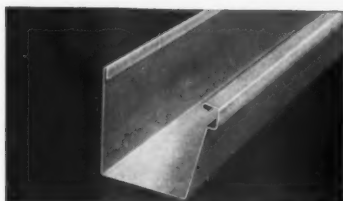
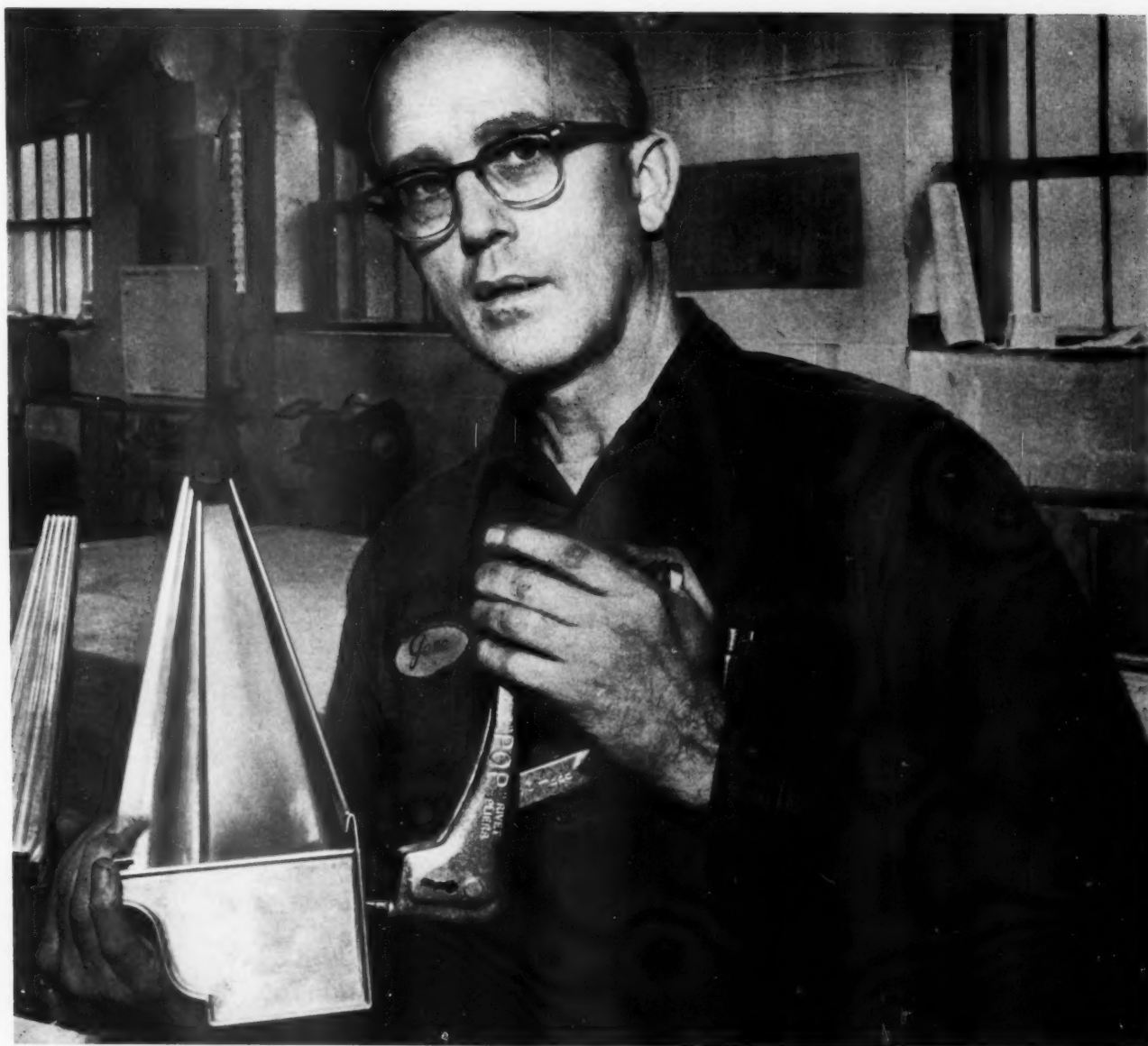


NEW PREPAINTED 5-IN. SYSTEM comes in white enamel, roller-coated uniformly onto bonderized aluminum and baked to a tough, lasting finish.



NEW COMBINATION HANGER speeds installation on both replacement and new construction; "free-floating" principle allows expansion and contraction.

ALUMINUM GUTTER JOBS!"



NEW 4-IN. BOX-TYPE SYSTEM costs less, yet features the same 20 per cent thicker alclad metal of the 5-in. system, installs just as quickly and easily, has the same full accessory line.



For exciting drama watch "Alcoa Presents" every Tuesday, ABC-TV, and the Emmy Award winning "Alcoa Theatre" alternate Mondays, NBC-TV

Aluminum Company of America
1002-C Alcoa Building
Pittsburgh 19, Pa.

Please send me detailed information on Alcoa rain-carrying equipment, including name of nearest distributor.

Name

Address

City Zone State



Manufacturers don't have to worry about Mrs. Perkins' "frettin"

*"Young man, I've told you, and told you that furnace
just doesn't heat my bedroom closet. Now I want it fixed!"*

About this time you have to set your jaw and once more
explain the furnace you installed can't do everything.

This type of problem is foreign to manufacturers,
but not to dealers. Lennox is acutely aware of the many
"little things" their dealers have to put up with.

This knowledge comes from constant contact in the field, for
Lennox values customer satisfaction as much as you do.
We have learned through experience and value the fact that the
heating and air conditioning business is *centered around the dealer!*

If you aren't getting the solid backing you deserve from
your supplier, take the time to get the complete Lennox story.

Call or write today. No obligation.

LENNOX

*World leader in indoor comfort
for home, business, schools*

Lennox Industries Inc. founded 1895 • Marshalltown, Iowa • Columbus, Ohio • Syracuse,
N. Y. • Fort Worth, Texas • Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des
Moines, Iowa • Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

YOU START MAKING OR



REPUBLIC ELECTRO PAINTLOK®—the right steel for products where paint adherence is important. The manufacturer of these highway traffic signs uses Republic Paintlok exclusively. Paintlok simplifies production because special chemical treatment is not required. This customer reports that Paintlok signs last as much as 65% longer than those made by more complicated, more costly production methods. Send coupon for more Electro Paintlok data.

LOSING MONEY

... the second you pick the sheet steel for a job!

Have you checked the steel stock you're using lately? Using sheet steel that's not exactly right for a job may be causing too-high forming, joining, and finishing costs—cutting a big slice out of your profits.

Many leading fabricators have found a way to be sure of the right steel every time. They buy Republic! Republic offers the world's widest range of standard steels, *plus* smart technical assistance from men who know fabricating—know your problems and how to help you solve them.

Count on Republic for uniform quality, too—another important factor in pushing your costs down, profits up. Republic delivers quality you can depend on—quality that's the result of research, testing, and control standards that are among the highest in the industry.

Check the steel you're using. Check your total fabricating costs. Then call Republic for the right steel, the right finish, the right quality to increase your profits. For more information, mail the coupon today.



REPUBLIC STEEL

*World's Widest Range
of Standard Steels and Steel Products*



REPUBLIC CONTINUOUS GALVANIZED—the right steel where both corrosion-resistance and low initial cost are considerations. Excellent for applications like the air conditioning duct work job shown here. The uniform tight zinc coating on Republic Continuous Galvanized won't crack, flake, or peel under any fabricating operations permitted by the base metal.



REPUBLIC ENDURO® STAINLESS—the right steel for products where sparkling long-lasting beauty and minimum maintenance are needed. ENDURO's strength and toughness, plus high impact-, heat-, abrasion-, and corrosion-resistance provide the perfect answer to many difficult sheet metal problems. Good forming qualities of ENDURO permit full use of existing equipment. Mail coupon for further information.



REPUBLIC GALVANNEALED—the right steel for products where resistance to heat, corrosion, and severe weathering is required. Hot dip galvanizing plus special heat treatment give Galvannealed a graduated coating of iron-zinc alloys between the pure zinc outer surface and the base metal. Result: a tough, uniform protective finish. No flaking, peeling, or spalling during forming operations. Send the coupon for more information.

REPUBLIC STEEL CORPORATION

DEPT. AA-9118

1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send more information on:

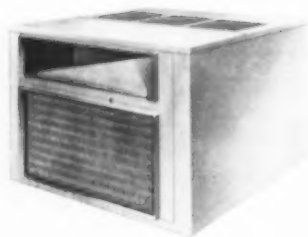
- ☐ Stainless Steel ☐ Electro Paintlok Sheets
☐ Galvannealed Sheets

Name _____ Title _____

Company _____

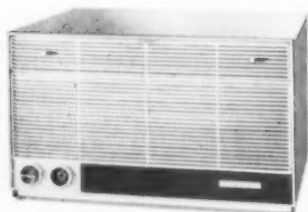
Address _____

City _____ Zone _____ State _____



HEAT PUMP WEATHERMAKERS

There's one for every home, every business. The residential line spans the field from a $\frac{1}{2}$ -ton Portable for a room to a 4.7-ton two-piece model for a mansion. The commercial line ranges in capacity from 7 to 30 tons, with components to tailor-make a system for the largest installation.



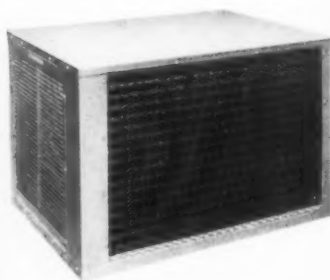
CARRIER ROOM AIR CONDITIONERS

The Royal Family of Air Conditioning, with power models for the largest rooms . . . prestige models for the finest homes . . . promotion models for price-conscious buyers. Twenty-two models, from the $\frac{1}{2}$ -hp "carry home" Portable to superpowered 2 $\frac{1}{2}$ -hp Imperial provide a model for every prospect on your list.



NEW CARRIER AIR PURIFIER

Latest product of Carrier research, this sensational new Air Purifier is a major advance in the techniques of air purification, cleaning, odor removal and humidity control. Easily attached to a forced air furnace—or air conditioning system. Self-cleaning filter. The newest exclusive for Carrier dealers.



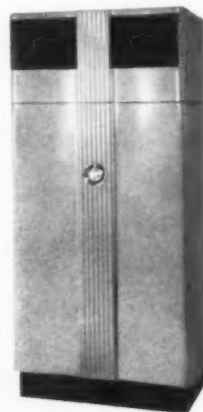
OUTDOOR REFRIGERATION UNITS

These versatile air-cooled units can be combined with various indoor cooling coil sections to provide summer air conditioning in new and existing homes, stores and offices. They can be installed almost anywhere—on rooftop, in yard or breezeway. Capacities: 1.8 to 10.7 tons.



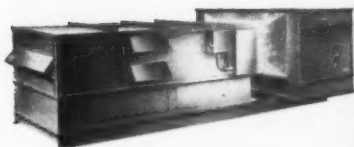
CARRIER CLIMATE CENTER

Another Carrier first. Dramatic Climate Center enables the homeowner to tell the weather at a glance, "dial" the climate he wants in his home, also make sure his air conditioning system is operating efficiently. All this from an 8 x 14" satin aluminum panel that installs easily between the studs in any room.



COMMERCIAL WEATHERMAKERS

Used singly or as part of a multiple unit air conditioning system, these self-contained units can serve a room, a floor, two floors or an entire building. Can be installed with or without ductwork, built into the wall or located completely in the air conditioned space. Three to 30 tons.



ON-THE-ROOF WEATHERMAKERS

Latest advance for heating and cooling one-story buildings, this new Carrier unit installs on the roof, occupies no valuable floor space whatsoever, uses only a minimum of ductwork and permits uncluttered ceilings. A big seller commercially. Capacities: 7.5 and 10 tons for cooling; 200,000 and 250,000 Btu for heating.



ONLY A CARRIER DEALER HAS EVERYTHING

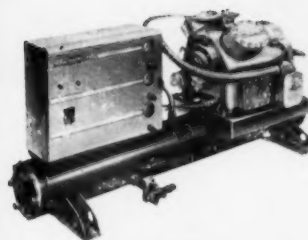
*for heating
and air conditioning!*

That's a strong statement, but it's fact. Only a Carrier dealer has everything to meet the needs of every commercial and residential customer. Just look at the scope of the heating and air conditioning lines shown here!

And that's not all. Each Carrier line leads its field with the latest technical developments. A Carrier dealer not only has the largest selection of products to sell, but also a steady flow of new products.

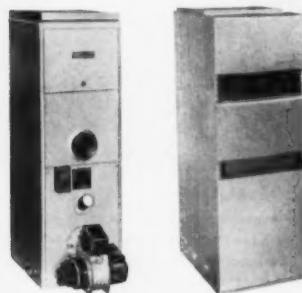
More? More! Carrier backs its dealers with everything to help business boom—for example, engineering help on the difficult jobs, continuous training in modern techniques, special credit on inventory, liberal financing plans, promotional help—many more!

Want the complete story on the most valued franchise in the industry? Call the Carrier distributor in the Yellow Pages. Or write Carrier Corporation, Syracuse, N.Y.



CARRIER APPLIED SYSTEMS

Carrier is the first to offer a complete line of hermetic condensing units up to 120 tons capacity for both air conditioning and refrigeration service. Also available for applied jobs are complete lines of compressors, evaporative and air cooled condensers and other components. A dealer can handle any applied job with Carrier.



OIL AND GAS FURNACES

Brand new design ideas, new components and new standards of performance are built into these new lines of gas-and-oil-fired Winter Weathermakers*. Each has features that make the addition of summer cooling easy and inexpensive. Four models: Upflow primarily for vertical discharge into ductwork; Downflow for homes with concrete slab or crawl-space foundation; Horizontal for homes with basements; Lowboy for basements where headroom is at a premium. Gas-fired bonnet capacities: 60,000 to 160,000 Btu. Oil-fired: 84,000 to 185,000 Btu.

* Reg. U.S. Pat. Off.

BETTER AIR CONDITIONING FOR EVERYBODY



EVERYWHERE



WIDEST SHEET SELECTION

At Ryerson you choose from the nation's largest and most diversified stocks—available to meet your most exacting needs.



TECHNICAL HELP

Your Ryerson representative gives you an unbiased recommendation—helps you select the best material for each job, whether carbon or stainless steel, aluminum or PVC.



SUPPORTING MATERIAL

Rod, bar, tubing, angles, beams, hexes, squares—everything necessary to do a complete job is available at Ryerson.

RYERSON CHECK LIST FOR SHEET METAL USERS

Steel Sheets

Galvanized, galvanized, cold rolled and stretcher leveled, hot rolled pickled and oiled, stainless, vitreous enameling, long terme, expanded metal and grating, perforated, etc.

Steel Bars & Shapes

Plain and galvanized angle iron, stainless, etc.

Steel Tubing

Seamless and welded mechanical tubing; structural tubing—square, rectangular and round; stainless tubing, pipe and fittings.

Aluminum

Duct sheets, building sheets, and many other alloys; perforated, expanded and embossed sheets. Rod, bar and tubing. Structural and extruded shapes. Architectural shapes and building products.

PVC

Ryertex®-Omicron PVC sheets, rod, tubing, pipe and fittings.

Machinery

Shears, lockformers, bending rolls, press brakes. Also equipment for punching, drilling, grinding, welding, etc.

Storage and Handling Equipment

Hoists, trolleys, sheet and coil lifters, storage racks, etc.



EQUIPMENT NEEDS

Maybe a newer, better tool can effect more economical, more productive operation. Ryerson has a complete selection and specialists who know your problems.



DEPENDABLE DELIVERY

Fast shipment on all your requirements—finest care in handling and packaging. Any quantity—when you need it.



BE "METALOGICAL"

All of Ryerson's many advantages add up to this assurance: Optimum Value for Every Purchasing Dollar year in and year out. So be "Metalogical"—Call Ryerson.



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PLANT SERVICE CENTERS: BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • HOUSTON • INDIANAPOLIS
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Does Your Customer Know You?

KEEPING CUSTOMERS and prospects informed on all services offered is an important function of a heating and air conditioning dealer-contractor or a sheet metal contractor. Far too often, it is taken for granted that customers know where to turn when they need a certain service or product.

What a customer or prospect does not know about your company may not hurt him — but it can hurt your company's business volume.

Keeping the public informed about the services you offer is one of the best ways to build business volume. Once started, it is easy to maintain such a program as a routine handling by office personnel.

One easy way to let your customer know about your company, the products it handles and the services it renders, is to prepare a small booklet outlining the range of your business activities, and use it in customer mailings.

One sheet metal contractor whom we know told us that he used this approach after he learned that some of his customers had given jobs to other companies because they did not know that he offered the particular service they wanted. In one instance, he said, while at a Junior Chamber of Commerce meeting, one of his customers told him that he had recently installed a new paint spraying booth and attached exhaust system. When the sheet metal contractor asked his friend why he hadn't called on him to submit a bid for this, the friend replied that he didn't know the sheet metal contractor offered that type of service.

This sheet metal contractor said this was a clue to him that he should begin an active campaign to inform all his customers about the complete service he is capable of rendering. He went back to his office and listed the many different types of work his shop could handle. After completing the list, he made copies and sent them to his foreman, bookkeeper and office manager with the request that they expand on any phase of the business he had omitted. When the copies were returned, he sent a composite list to his printer with an order to prepare an attractive brochure illustrating the facilities of his company. When the brochure was completed, it became standard practice for the contractor's staff to enclose a copy with every statement sent to customers and with every bid submitted. It is also periodically sent out to all customers and prospects on the mailing list.

He reports that many leads for jobs come in from this promotion, and compared with the cost of other promotion materials, it is proving to be the least expensive and most productive activity of this kind conducted by his company.

This idea can be adapted by heating and air conditioning dealer-contractors who want to locate prospects among their old customers and from other groups that may be interested in the services offered by the company.



Teamwork Pays Big Dividends in This



REVIEWING SPECIFICATIONS and work necessary to meet customer requirements are Ralph A. Hovland (left) and Lawrence G. Hestekin Sr.

This dealer-contractor organized his firm so each officer is responsible for certain job functions and acts as part of the team that estimates unit cost of production items

ESTIMATING THE UNIT COST of production items is an exacting procedure that must be performed each time a quotation for a new item is requested by a manufacturer. The method used at Hovland Sheet Metal, Inc., Eau Claire, Wis., is effective and accurate, but requires constant checking by all supervisory personnel.

Manufacturers in small cities often find it to their advantage to contract out many of the parts required for the products they build. Model changes, etc., interfere with the fabrication techniques used by sheet metal contractors. For this reason, it is not always practical to use the same figure quoted previously on a related item.

In order to submit quotations that adequately cover the cost involved and a fair profit, Hovland

Sheet Metal, Inc. relies upon the practical and business experience of its officers and superintendents.

Delegated Responsibilities

Heading the company are L. G. Hestekin, president; R. J. Hovland, vice president; R. A. Hovland, secretary; and W. E. Hestekin, treasurer. Lawrence G. Hestekin Jr. is controller and Robert J. Hestekin is service manager. Each of these men is entrusted with certain responsibilities that contribute to the overall cost and operation of the company.

Such as, Walter E. Hestekin, company treasurer, also handles estimating and engineering regardless of whether it is a residential heating and air conditioning system or a complete ventilating system for a plant.

The overall supervision of shop and installation is the responsibility of Ralph A. Hovland, secretary of the company, and so it goes for each of the officers. They have assigned responsibilities that entail certain functions within the scope of their designated work assignments.

Departmentalized Operation

The overall business is operated so that each type of work is handled as a separate business. In other words, commercial and industrial work are handled as an independent business and must carry its full share of overhead and show a profit. The same thing applies to residential heating and air conditioning and the production fabricating side of the shop's operation.

The responsibility for keeping tabs on the cost, collections and overall records of the various segments of the business is entrusted to Lawrence G. Hestekin, Jr., controller. Coordinating of individual departments and segments of the business is the re-

Efficient Departmentalized Operation

PLANNING A QUOTATION
for a production item are
Walter E. Hestekin (left), esti-
mator and engineer, and Law-
rence G. Hestekin Jr., con-
troller



sponsibility of company president Lawrence G. Hestekin Sr.

Hovland Sheet Metal, Inc. employs between 40 and 50 journeymen, with an annual payroll of approximately \$280,000 a year. The firm uses approximately seven car loads of steel sheets annually, and additional quantities of stainless steel, copper and aluminum.

Computing the Quotation

In handling production orders, which often result in repeat work from manufacturers, it is important to submit a firm quotation, according to R. J. Hovland, vice president. In order to submit a price that will compare favorably with other bids and include a fair profit, the firm worked out a routine for handling the quotation.

First, the product to be made is examined by Ralph Hovland, who through his familiarity with shop layout and shop procedures can visualize the necessary arrangements that must be made to handle the quantity needed with the least amount of lost time. After pre-

paring a tentative production plan for the shop, he checks with shop superintendent Don Meindel. The result of this conference becomes the production plan.

The plan is submitted to estimator Walter E. Hestekin, who holds a conference with Lawrence G. Hestekin Jr., controller, to determine the overall cost of the job and the amount of overhead that will be applied to the work. The company's records are used to determine cost on previous jobs performed for similar quantities.

Results from this conference, plus the production plan are reviewed by Lawrence G. Hestekin Sr., company president. He decides whether a bid should be submitted, or if others should be consulted to find out if the item can be produced at a lower cost. He must also determine the amount of work involved in this particular order as compared with the overall amount of work to be handled by the shop.

Some of the records kept on a sample production item include the time required for a man to perform each operation in the

fabricating process, quantity of material used, quantity of waste material accumulated, and the quantity of accessory material required (this includes the number of sheet metal screws, bolts, nuts, gas for heliarc welding per piece, the amount of electrode used, etc.).

Allocating Overhead

Each segment of the business uses the same percentage of overhead in making a quotation or a bid. It's been found that this is more advisable than attempting to compute an overhead figure for each segment of the business as the amount of work involved would not normally prove to an advantage to the contractor's operation. The overhead normally charged for this type of work is 25 percent.

Most of the items submitted for production work are completely designed by the manufacturer. However, in cases where the design is not complete and must be worked out by the estimator and

engineer, it is charged for on an hourly basis.

Tabulating Costs

When every production job is completed, a tabulation is made to determine how the company made out financially. Whatever adjustments are necessary to realign operating costs with the item produced, these notations are made on the record of the product for future reference.

Each month a complete summary is made on the various segments of the business to keep a careful check on operating costs.

Flexible Shop Operation

When an order for a production item is received in the sheet metal shop, many of the lighter tools required to fabricate the item are positioned to form either a circle or a large U so the work will flow smoothly and evenly through each operation.

This is possible because several work benches are mounted on industrial casters and small tools are mounted on portable benches. Also, the heavy, permanent equipment in the large shop area is located far enough apart so adequate setups for production work can be assembled without interfering with other work going through the shop.

Portable Work Benches

In production work, the firm found that numerous work benches are required for various jobs. Therefore, to provide sufficient bench room for a certain operation, collapsible work benches were designed. The two sets of legs at each end of the work bench are connected by expandable longitudinal supports. These expandable supports are fabricated from $2 \times \frac{1}{4}$ in. flat stock, pivoted at each end and at cross points. Journeymen are able to push the two end sections close together and store



PILOT PRODUCTION ITEM is used to determine the jigs, equipment and similar techniques required. This is worked out between Ralph A. Hovland and shop superintendent Don Meindel

the collapsible benches out of the way when not needed.

Training Program Is Essential

The company's ability to work at many different types of jobs is based upon its continuous training program for both apprentices and journeymen.

They are periodically reviewed in the techniques of doing work the safe and proper way, and shown how to use new tools being introduced to the industry.

Mr. Hovland feels this training program is essential to a sheet metal contractor located in a small community like Eau Claire where

the population is about 40,000.

The company was founded in 1922 by A. J. Hovland, (father of R. A. Hovland), who retired from active management in 1953 but continued to be actively interested in the business until his death in 1955.

Expansion Marks Progress

The company recently opened a branch shop in Chippewa Falls (12 miles from Eau Claire) to handle its residential heating and air conditioning work. This branch is known as Chippewa Hovland Sheet Metal Inc., and is under the supervision of Robert Hovland.



NEW SALES DEMONSTRATOR UNIT for residential air conditioning is examined by Robert J. Hovland (left) and Ralph A. Hovland to determine most effective use of this demonstrator along with existing sales tools

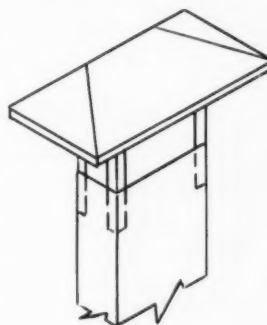
HUGH REID'S SHEET METAL PATTERN

How To Develop:

A Rectangular Gravity Weather Cap

Can you develop this pattern in 30 minutes?

Here's a new and accurate approach to the development of sheet metal patterns that will cut costly layout time. The method applied to this month's fitting can be used as a guide to develop related patterns and solve other problems encountered at the layout bench



ON AN ISOLATED JOB, where one weather cap is required, any design within reason would be acceptable. However, in industrial work where there may be 20 to 30 stacks with weather caps on the same building roof, you could imagine the confusion in design that could exist unless some standard was adhered to.

A suggested standard which has common acceptance in industrial sheet metal work is illustrated here (see pictorial drawing).

When the cap is constructed of light gage metal, it is advisable to use a double metal thickness at

the supports. This is an added safety factor to prevent the cap from being torn loose in a high wind.

Common practice is to solder a small square section of sheet metal at the location of the supports on the underside of the cap, and drill bolt holes through the double metal thickness.

All seams and rivet heads should be soldered to prevent leakage.

The pattern layout time for this project should not exceed 30 minutes.

Given the plan view and the front view of a rectangular weath-

er cap, the following is a step by step analysis of the simplified pattern problem solution.

Quarter Plan, Fig. 3 —

a) Draw a horizontal line and label the left extremity as point B. From this point measure to the right one half the given $4\frac{1}{2}$ in. cap length ($2\frac{1}{4}$ in.). Mark the point as C.

b) From points B and C draw lines upward and perpendicular to line B-C. Measure the given $1\frac{1}{4}$ in. half width of the cap as shown on Fig. 1 on both lines and mark

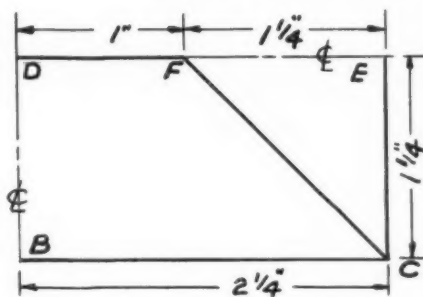


FIG 3-QUARTER PLAN
SIMPLIFIED METHOD DRAWING

NOTE: THESE PATTERN dimensions should be multiplied by the predetermined ratio figure to produce the actual size of the fitting needed



the points as D and E. Draw a line connecting points D and E.

c) From point D measure to the right one half the given length of the peak ridge of the cap which is 1 in. and mark the point F. Draw a line from point C to F.

Full Weather Cap, Fig. 4—

a) Draw a horizontal line and label the left extremity as point G. From point G measure to the right the given $4\frac{1}{2}$ in. length of the cap as shown on Fig. 1 and mark the points as H. Working from point G measure to the right, one half the cap length ($2\frac{1}{4}$ in.) and locate point J. Through point J draw a work line perpendicular to line G-H.

b) To develop the length of the slope side (B-D, Fig. 3) draw a right angle, transfer the given $1\frac{1}{4}$

in. half width of the cap from Fig. 3 to the horizontal leg of the right angle. Transfer the given $\frac{3}{4}$ in. height shown on Fig. 2 to the vertical leg and through the points draw the hypotenuse line marked A.

c) Set a compass to hypotenuse line length A and with point J (Fig. 4) as center step off two spaces on the perpendicular work line. Mark the points as K and L. Through points K and L draw lines perpendicular to and extending on both sides of the work line.

d) Transfer the 1 in. length D-F from Fig. 3 to both sides of point K (Fig. 4) and mark the points as R and S. Transfer the $2\frac{1}{4}$ in. length (line B-C) from Fig. 3 to both sides of point L (Fig. 4) and mark the points as P and Q. Draw the lines G-R, R-P, H-S and S-Q.

e) Set a compass at the given

width of the cap which is $2\frac{1}{2}$ in. and with point G (Fig. 4) as center, draw an arc above and to the left of point G. With line length R-P (Fig. 4) as radius and point R as center, cut the arc drawn from point G and label the intersection as point N. Draw lines G-N and R-N.

f) With length $2\frac{1}{2}$ in. as radius and point H (Fig. 4) as center, draw an arc above and to the right of point H. With line S-Q (Fig. 4) as radius and point S as center, cut the arc drawn from point H and mark the point as M. Draw lines S-M and H-M.

g) From lines G-H, H-M, Q-P and G-N measure out the given $\frac{1}{4}$ in. flange length and draw lines parallel to and equal in length to these lines.

Add allowance for seams and lay out the rivet holes.

What's the Future of Central Servicing?

CONSIDERABLE EVIDENCE within the past few years has shown that the attitude of customers towards product service has become more critical. Therefore, it is a vital link to continued profitable growth.

The real question is, how, and what form, shall this service be provided so it will benefit both customer and business. Namely, should it be rendered by a relatively large centralized service organization, owned and operated by a manufacturer or his distributors, usually existing only in metropolitan markets, and providing services on only one brand of air handling device, as compared to that rendered by dealer-contractors and independent service organizations and usually given on all or a large number of brands handled by the installing company. Both methods have been tried out in several metropolitan areas, without any concrete evidence as to the best arrangement for servicing summer air conditioning equipment.

Case for Centralized Service

The case for centralized service is:

- 1) Economics can be realized from:
 - a. More efficient scheduling of service calls.
 - b. Better turnover on parts inventory.
 - c. Reduced training time.
 - d. Fewer call backs, etc.

2) It gives the factory or distributor a "laboratory" for the training of his service personnel.

3) It provides specific identification with a particular brand of equipment.

Case for Independent Service Organizations

Case against centralized service and for the service by the dealer-contractor dealer or independent service organization is:

1) His schedule of charges to the consumer is frequently lower.

2) The relatively small, neighborhood serviceman can usually respond more quickly to service calls and is more likely to be available at odd hours—nights, Sundays, and holidays.

3) He can maintain a personal relationship which builds customer confidence and future sales.

4) The serviceman should be one of the best sources of potential sales leads, and the dealer can take better advantage of these leads than can a distributor or a factory service operation.

The ultimate decision as to which operation is better rests with the customer. And the customer will indicate his preference by the way he makes his purchase. If it's found that sales of companies offering centralized service are on the increase, it indicates that your service policies should be reviewed.



COLORED POLYVINYL MATERIAL adds impressive ornamental touch to new high school. Insert shows closeup of section joint of fascia at the two screw heads

Plastic Fascia Sets Off Modern School Building

Colored polyvinyl strip accents brick areas of new high school, protects against moisture penetration and staining—a new use for plastics which opens doors for sheet metal contractors

THE ARCHITECT'S constant search for new materials to help him attain his design objectives usually must offer the relatively rare combination of ornamental quality and serviceability. When such a combination

does come along it is used with imagination and often opens new doors to everyone concerned with construction and design.

Such a development is displayed on the Frank R.

Wiley Junior High School, Cleveland Heights, O., as a rigid polyvinyl fascia strip which enhances the large areas of tan brick, and at the same time assures protection against moisture penetration and staining.

Requires Little Maintenance

The iron oxide red fascia is compatible with the solid brick walls yet provides an attractive accent to the modern structure. Since the color is ingrained in the sheet instead of being applied to its surface, the tone is permanent and does not fade.

Five thousand feet of 0.060 in. vinyl sheet is installed over a sheet metal channel at the edges of the roof. The material was fabricated and installed by Industrial Roofing and Sheet Metal, Inc., Cleveland. President Orrin Lau supervised the project from start to finish and assisted the architect in adapting the material to the application.

Fabrication Requires No Special Tools

The material was fabricated into the required shape with an electrical heating element. No other special shop tools were required. The 5000 ft of fascia strips, the 18 ga galvanized gravel stops and the aluminum bottom retaining strips were fabricated by two men in three weeks. Installation took two men four weeks. Cost of the rigid polyvinyl material ran about one-third less than the estimated cost of a porcelain-coated fascia and achieved the same ornamental effect.

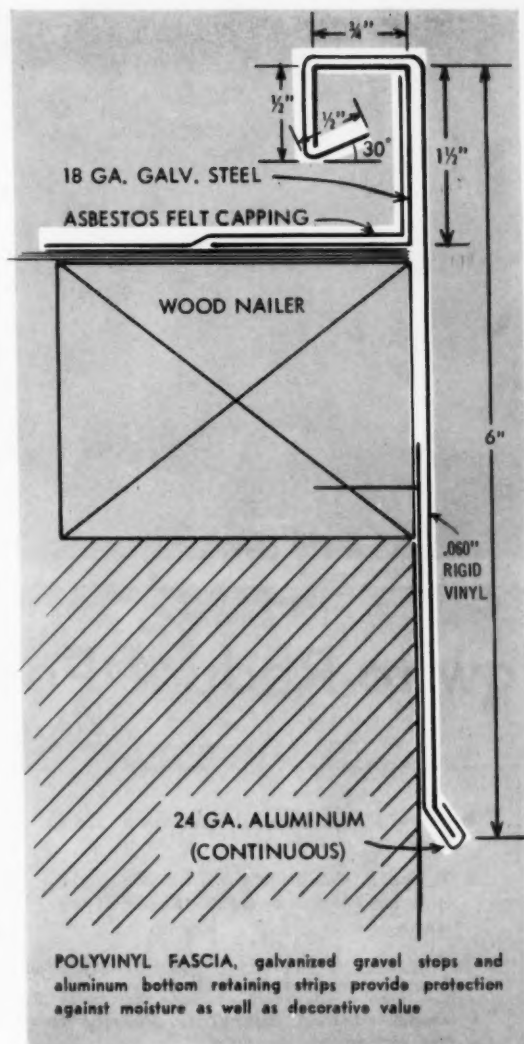
The plastic was cut into 9 in. wide strips, trimmed in most cases to 6 ft lengths. The strips were warmed to 250 F over the electrical heating unit, placed in an ordinary sheet metal hand brake and shaped as shown in the detail drawing. Since rigid vinyl holds any formed angle without springback, no heat was required on the die bar of the hand brake.

Clip Secures Plastic Edge

The 18 ga galvanized steel gravel stop was shaped to provide a $1\frac{1}{2}$ in. base for fastening to a wooden nailer strip set into the leading edge of the masonry wall. The $1\frac{1}{2}$ in. high gravel stop was bent back $\frac{3}{4}$ in. to form a natural clip into which the top edge of the rigid vinyl was inserted.

Three inch wide strips of 24 ga aluminum were formed into a bottom retaining strip. The lower edge of this strip was turned into a 180 deg lock seam and bent slightly away from the building. The lower edge of the rigid vinyl fascia was fitted into the lock seam. This strip was secured to the vertical side of the wooden nailer which had been inserted at the leading edge of the masonry wall.

Finally, the lower edge of the vinyl fascia was in-



serted into the aluminum retaining strip and the top edge of the fascia was snapped over the gravel stop. The flexibility and shape of the fascia facilitated this operation.

Provide Space for Movement

A "near" butt joint holds adjoining sections of the fascia apart just enough to avoid contact between the plastic material and screws holding a 2 in. wide vinyl clamp which has the same shape as the fascia and covers the joint. The aluminum screws run along the vertical center line. This space between the plastic and the screws allows for contraction and expansion to avoid buckling of the fascia strips.

The editors acknowledge the cooperation of Robert T. Holtz, product engineer, B. F. Goodrich Chemical Co., in providing information and illustrations for this article.



POWER ROOF EXHAUSTERS ventilate operating rooms and toilet facilities in a new wing of the Methodist hospital, Omaha, Neb.

How to Reduce Power Exhauster Noise

- *Provide additional vibration isolators.*
- *Be sure the building's harmonics do not synchronize with those of the exhauster.*
- *Put sound absorbent lining in duct from exhauster to first elbow.*
- *Don't connect ductwork directly to the exhauster housing.*
- *Install acoustic materials within the occupied space if low noise level is required.*
- *Do not specify low speed fractional horsepower single phase motors which have high inherent noise levels.*
- *Install a sound baffle within the curb beneath the unit.*

BY I. I. SOLZMAN
General Manager
The Gallaher Co.

IF A POWER ROOF EXHAUSTER is properly designed aerodynamically; if it is structurally sound in its design; if it has adequate isolators; and if it is installed with the utmost care, it will be satisfactory, provided that:

- the tip speeds of the fan are not excessive;
- air velocities are not excessive;
- the air quantities are relatively low for each power roof exhauster.

When power roof exhausters are installed on schools, hospitals, office

and apartment, and other large buildings, care must be taken in the installation in order to keep noise below the annoying level.

No Equipment Is Noiseless

First, however, it is meaningless to talk about the decibel rating of a power roof exhauster except for comparative purposes. And if various makes and designs are to be compared, it is essential that the noise level measurements be made under identical conditions, if they are to have any meaning.

The use of terms, such as "noiseless," to describe equipment is, of course, inaccurate. There is no noiseless piece of moving equipment, since even the bearings will increase the room noise level somewhat. All noise is relative, and if air is moved where machinery is running, the noise of the fans and other equipment will all be added to the normal noise level of the enclosed space.

Although the power roof exhauster was first utilized prior to 1940, its full application did not really come into being until the late 1940's. And like any piece of mechanical equipment, it has a noise factor which

must be controlled. Where the noise problem is a critical one, it is evident that there must be close cooperation between manufacturer, engineer, architect, and owner.

Decibel Measures Sound Power

Airborne sound is a variation in normal atmospheric pressures. For a pure tone, the number per second that the pressure changes through a complete cycle is the frequency of the sound. Thus, the standard tone A has a frequency of 440 cycles per second. The extent of variation in pressure is measured in terms of a unit implied with the common term, "the decibel."

The decibel is a measure of the power of sound and is a logarithm of a ratio of two values of power. Equal changes in decibels represent equal ratios. Therefore when the decibel is used to express noise levels, a reference level is implied. At present, this reference level can be referred to as "zero decibel," the starting point of the scale of noise level.

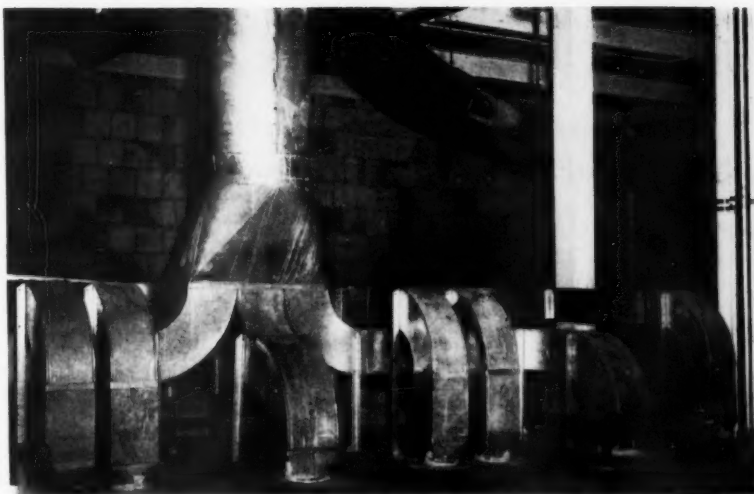
Start with Weakest Sound

The starting point is about the level of the weakest sound that can be heard by a person with good hearing in an extremely quiet location. The sound level in the large office usually is between 60 and 70 decibels.

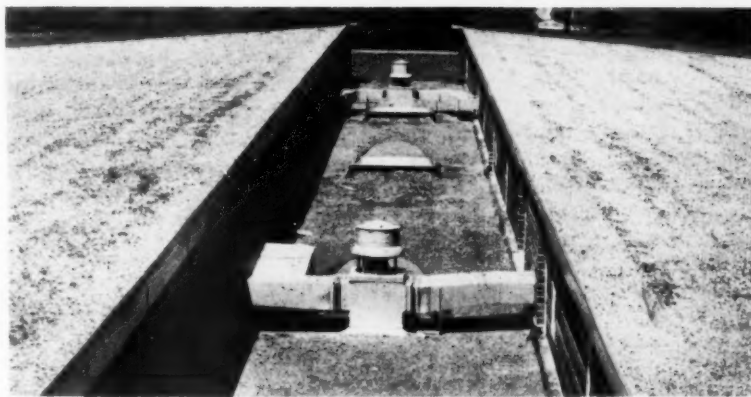
The apparent loudness that we attribute to a sound varies not only with the sound pressure but also with the frequency — or pitch — of the sound. In addition, the way it varies with frequency — rhythm — depends upon the sound pressure.

The physical and mental conditions of the occupants materially affect the annoyance factors of sound. For example, the pecking sound of a typewriter in use probably goes unnoticed by a person who is physically fit; yet to a person suffering from sinusitis or a migraine headache, it might be intolerable.

Architects and engineers interested in the application of exhaust fans are primarily concerned with the annoyance factor of sound and not its power. Also a primary concern is the an-



WELL DESIGNED exhauster duct system shown here is installed at the Armour Pharmaceutical laboratory at Kankakee, Ill.



SCHOOL CLASSROOMS, as at this school in Washington state, represent an important ventilation need where quiet operation is necessary.

noyance factor within the occupied space. This means that frequency or the number of "cycles" of the sound waves is as important as the power, in determining if an installation will be objectionable.

Noise is Highly Relative

The manufacturer of power roof exhausters can build a power roof exhauster as quiet as it is possible by utilizing internal isolators to reduce the transmission of vibration from the rotating element to the housing of the power exhauster. But from that point on, the architect or engineer, in his directions to the contractor, must take over. And what he does in speci-

fying materials and methods of installation can either reduce or add to the annoyance factor of an installation.

Let us assume that a centrifugal power roof exhauster is to be installed on the roof of a given room. If this room has an acoustically treated ceiling, carpeted floor, papered wall, venetian blinds and draperies, the noise level in this room would produce a certain decibel reading.

Then, let us assume that we make no changes except that we remove the draperies and the venetian blinds; remove the carpet from the floor; and the acoustical treatment from the ceiling, leaving a plaster ceiling, a plaster wall, and a tile floor. Another

"Contrary to popular understanding, slow speed motors will not automatically provide quiet operation; the exact opposite may be true"

reading with the same meter in the same location will produce a decibel reading which will be higher than the original reading.

Tiled walls and floors, as in a laboratory, will give an even higher reading.

Readings Will Vary

If we take the same space, and remove the power roof exhaustor and install a different type of exhaustor with exactly the same capacity reading, and, if we make the same three noise measurements, we will probably have an additional three sets of decibel readings.

Thus, noise and resulting noise is a highly relative matter. A very quiet power roof exhaustor and a rather poor installation and room design may result in a noise problem.

Design Quiet Installation

The power roof exhaustor can make the job of achieving the quiet installation easier if it has certain features provided in the design. These are:

1) Careful streamlining of the air passages to eliminate, or reduce to a minimum, the possibility of air turbulence.

2) Structurally sound design to prevent vibrations from being transmitted.

3) An efficient type of isolator between the rotating elements and the housing. This isolation system must, of course, have a certain amount of rigidity, or mechanical troubles may develop because it is necessary that clearances between the fan inlet and the housing be very close. If the isolators are such that they allow too much flotation of the rotating element, the fan wheel may strike the inlet of the exhaustor.

4) Wheels which are properly balanced and structurally sound.

RPM Is Important

Contrary to popular understanding, slow speed motors will not automatically provide quiet operation; the exact opposite may be true.

Many fractional horsepower single phase motors in the lower speeds have an inherent magnetic hum or "growl" which sets up harmonics of a low frequency. New standards for smaller motor frame sizes are dictating the reduction in the amount of iron and copper in the motor. This, in turn, results in a greater amount of magnetic "growl" in the slow speed fractional horsepower single phase motors. However, it is much less difficult to isolate high frequency vibrations and noises than those of low frequency.

In order to isolate low frequency sounds and noises effectively, it is essential that the isolator have a low frequency. This would require a very long spring — a spring type isolator — or if some other type of isolator, it would have to allow a great deal of movement.

Use Small Diameter Wheel

Isolators used on the rotating element of a power roof exhaustor must have a certain amount of rigidity if they are not to allow mechanical striking between the close clearance parts of the rotating element and the housing. Therefore, it is practically impossible to isolate the low frequency magnetic hum in a power roof exhaustor. Generally, it is better to utilize a smaller diameter wheel that operates at a higher rpm—although not necessarily at a higher tip speed—than a larger wheel at a lower rpm.

How to Reduce Noise

There are a great number of things that can be done to assure a satisfactory installation. Some of these are:

1) Provide additional isolators between the housing of the exhaustor and the building.

2) Be sure that the harmonics of the building are such that they do not synchronize with the harmonics of the power roof exhaustor.

3) Utilize flexible electrical connections to the motor of the exhaustor so that the deliberate flotation of the rotating element, which includes the motor, motor mountings, and wheel, is not transmitted into the building.

4) Place sound absorbent lining in the duct from the roof curb on which the exhaustor is mounted into the first elbow in the duct system.

5) Do not connect ductwork directly to the power roof exhaustor housing. If necessary, specify a fabric connection of other sound absorbent material between the metal parts of the power roof exhaustor housing and the duct.

6) Evaluate the nature of the occupied space which would affect the noise level, and if a low noise level is required, specify acoustical materials to be installed within the space.

7) Do not specify low speed fractional horsepower single phase motors which have high inherent noise levels.

8) Install a sound baffle—which can be a simple piece of equipment—within the curb beneath the unit.

9) It may be helpful to install more smaller power roof exhaustors since the air noise caused by the movement of a large quantity of air through a single opening would create a higher noise level than would the exhaust of an equal quantity of air through a number of smaller roof

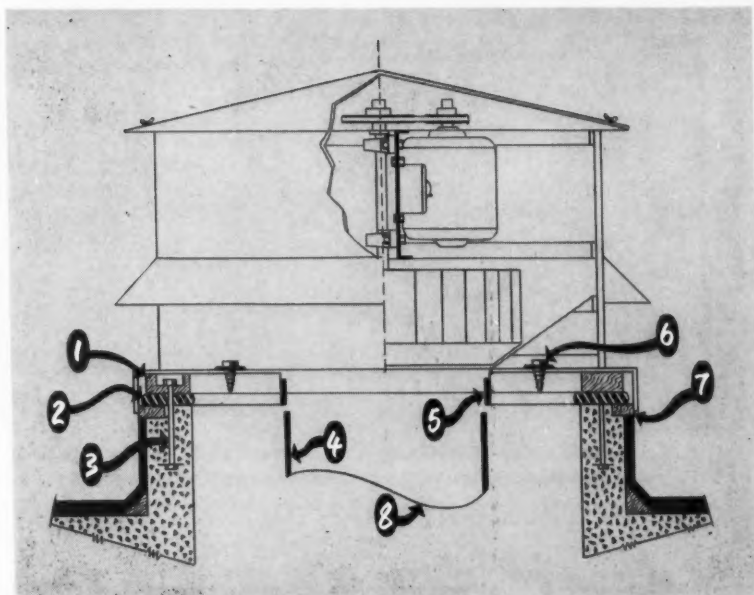
ings, according to Mr. Solzman.

Advantage of Belted Units

Some engineers feel that belted units will automatically provide quiet installations. However, there is no assurance that a belted unit will solve the noise problem.

One advantage that a belted unit might have would be nearly all belted units use 1800 rpm motors and that a certain amount of isolation exists between the motor and the fan and shaft. This would also mean a smaller amount of magnetic hum due to the use of the higher speed motor.

However, it is known that if a belted unit is not structurally sound, it can be noisier than a direct connected unit. The reason for this is that more metal surface can vibrate. Also, the belted unit will have the noise of four ball bearings, whereas the noise of a direct connected unit is affected only by two ball bearings in the motor.



MAXIMUM QUIETNESS can be obtained by following these eight installation tips: (1) Use a 2 × 4 in. wood frame; (2) Use a 1 in. isolation pad; (3) Securely anchor exhaust to the concrete curb; (4) Use acoustical duct lining; (5) Use a gasketed slip fit or fabric connection to reduce vibration; (6) Use 2 in. lag screws with lead washers; (7) Use a 1 × 1 in. nailer strip of wood to further reduce vibration; (8) Make sure that the connecting duct velocities do not exceed 1000 fpm

Curtain Wall Panels Grow in Popularity

COLOR AND TEXTURE were added to the exterior of the New Kensington, Pennsylvania High School with a "pebble grain finish" green porcelain enameled aluminum made by the Ingram-Richardson Mfg. Co., Beaver Falls, Pa. The panels are mounted below and above aluminum frame windows.

The 1½ in. thick panels consist of these components: face pan of No. 3 pebble grain finish aluminum, porcelain enameled; ¾ in. air space, maintained by stainless steel spring clips; 1 in. Fiberglass core 6 lb density, covered by thick asphalt coating; and 16 gage galvanized steel back pan.

The panels were mechanically assembled to form a complete rigid unit, with gasket around the perimeter to separate the flanges. Weep holes are provided to allow condensation to escape. The curtain wall is backed by cement-asbestos board.

CURTAIN WALL panels for school application is growing in popularity with architects. Approximately 7100 sq ft of porcelain enameled aluminum was used in this project





FULL HEIGHT DISPLAY WINDOWS plus tile exterior form an effective sales promotion combination to people traveling the main thoroughfare in front of the company's building. The sign shows the company name and the services it offers

Air Conditioning Sales Record Built by Steady Promotion

The growth of this firm can be directly traced to a belief in continuous sales promotion and enforcing policies built around the approach of informing the public



AT SEMI-MONTHLY MEETING company officers review events of the past two weeks and make plans for the future. From left are: Bob Frazier, Dick Schurkamp (standing), T. R. Frazier and Dean Frazier

THE COST INVOLVED in conducting a continuous sales promotion program is often questioned by dealer-contractors because it's difficult to produce proof of the results achieved over short periods. But the benefits of a well-planned program, conducted over a period of years, can produce measurable results such as those shown by Frazier Heating and Air Conditioning Co., Omaha, Nebr.

P. R. Frazier, president, started his company in 1929 in a 612 sq ft building. The company now finds its 11,250 sq ft building too small to handle the annual work load. How this company grew can be traced to its belief in sales promotion and the policies built around this approach of informing the public of its services.

Agency Directs Program

The present sales promotion program has been in effect for five years and is handled by a local advertising agency which has built its approach around

radio and television advertising, with some newspaper and direct mail promotion. Company management believes that better results are obtained through the use of the professional advice and guidance provided by the advertising agency.

Hold Frequent Meetings

Company management is handled by P. R. Frazier, president; Bob Frazier, vice president, and head of the sales department; Dean Frazier, secretary and head of the installation department; and Dick Schurkamp, office manager.

This group meets twice a month in the evening to go over business that has transpired since the previous meeting and to make plans for the future.

Merchandising and advertising for the coming year is discussed during the fall months.



SPACIOUS DISPLAY ROOM makes it possible to show full line of equipment to prospects and to show how equipment is adapted to a complete year 'round air conditioning system

Planned Promotion Pays Off

When asked for his opinion on the effectiveness of the current sales promotion program, Bob Frazier said that he feels it has helped the sales department tre-

mendously. For the first three years, the program was slow to show results, but now the effectiveness of continuous advertising is paying off because the public, over a period of years, has associated the advertising, both visual and verbal, with the company.

Dick Schurkamp, office manager, said that he feels hit or miss advertising does not get the right return for the amount of money spent. Best results are achieved by preparing a plan to promote the company and its services and adhering to the plan.

Must Educate Prospect

Dean Frazier, speaking for the installation department, says that most people are not familiar with the concepts of good warm air heating and summer air conditioning. He has noticed in his contact with people who have listened to the company's advertising, that they are more familiar with what the equipment is designed to do.

Bob Frazier has noticed far better acceptance of his company's recommendations by those who are familiar with the Frazier name and the system they recommend. This fact was proven in his contacts with the Omaha Home Builders Association and in the local parade of homes activity, accord-

Recap of Frazier Billing January-August, 1959

NEWSPAPER

World Herald: 130 inches @ \$5.88
1 2x2 Manufacturer tie-in ad, June 9
14 3x3 Mfg. tie-in ads, each Sun. and Tues.
starting June 14 thru July 28\$ 764.40

RADIO

KBON 300 25-second anncts @ \$3.05
5 per day May 10 thru July 8 915.00
KOWH 531 25-second anncts @ \$3.25
10 per day May 6 thru May 12
7 per day May 13 thru June 9
10 per day June 10 thru June 22
5 per day June 23 thru July 19 ... 1725.75
KFAB 500 25-second anncts @ \$4.50
10 per day May 7 thru May 12
7 per day May 13 thru June 22
5 per day June 23 thru July 22
3 June 23 2250.00

TELEVISION

WOW-TV 30 1-minute spots in movies, @ \$37.00
Fri. Sun. and Mon. starting
Fri. May 29 thru Mon. June 8
Thurs. Fri. and Sat. starting
Fri. June 12 thru Thurs. Aug. 6 1110.00
KMTV 20 20-second anncts July 1 thru 7 500.00
10 20-second anncts July 11 thru 17 .. 300.00
TV Production: video tape, cards & slides 100.30
DIRECT MAIL total production and mailing 350.65
RADIO January thru March 330.75
Total Cost of Promotion\$8346.85

TV Announcements

... are made by Dean Frazier, secretary and head of the installation department

VIDEO

Dean Frazier ...
camera back to include
display of units
Impose on screen (Super)
central air
conditioning unit

Super: "No Money Down-
5 Years to Pay"

(off super)

Close-up of Dean Frazier

Super: PR 0071-Frazier

(off super)

Super: PR 0071-Frazier

AUDIO

I'm Dean Frazier of Frazier Heating and Air Conditioning Company, and I'd like to show you these new waterless cooling units. If you think that central air conditioning is fine for office buildings, but much too expensive for your home ... we're happy to announce that Frazier's can add one of these units to your present heating system for less money than ever before! What's more, you can buy for no money down and have up to 5 years to pay! That's because unlike other types of air conditioning, central air conditioning is a permanent home improvement. So don't swelter through another summer ... and don't settle for room-by-room air conditioning. Call Prospect 0-0-7-1 for Frazier's free air conditioning survey ... we'll recommend the unit that's best for your home, and tell you exactly how much it will cost. Remember, that's Prospect 0-0-7-1 ... Frazier's ... heating and air conditioning specialists for 29 years.

VIDEO

Dean Frazier

Camera back to include
display of units

Super: central
air conditioning unit

Super: "No Money down—
5 Years to Pay"

(off super)

Camera on Dean Frazier

Super: Prospect 0071
Frazier

AUDIO

I'm Dean Frazier of Frazier Heating and Air Conditioning Company. If you've put off air conditioning your home because you're thinking about the cost ... let me commend you! A good air conditioning system is a big investment and deserves a lot of thought. That's why before air conditioning your home, Frazier's would inspect it carefully, and recommend the proper type and size of unit for your particular needs. Our equipment has been unsurpassed in performance and styling since 1900 ... and as you can see, there's one of our units to meet the requirements of any home. What's more, because central air conditioning is a permanent home improvement, Frazier's can install it for no money down, with up to 5 years to pay! Why not take advantage of Frazier's free air conditioning survey and see for yourself how little it costs for comfort! Call Prospect 0-0-7-1 ... Frazier's ... heating and air conditioning specialists for 29 years.

ing to Frazier. He claims this familiarity makes it easy for prospects to have confidence in installations made by the company.

Summer Promotion Pays Off

Sales promotion during the summer months concentrates on summer air conditioning, with the result that in 1959, over 50 percent more central summer air conditioning systems were installed than during the summer of 1958 when slightly more than 100 were sold.

The sale of central summer air conditioning is not confined to either the new house market or the modernization market, but is divided about equally in each of these two markets.

Radio Pre-Sells Prospect

"Prospects who have heard our radio message are easy to talk to about the advantages of summer air conditioning", says Bob Frazier, "especially if the cost can be included in the mortgage payments for a new home where the payments are spread out over 20 to 25 years." He also found that modernization prospects who have paid off the bulk of their mortgage and other bills are willing to spend the money for a good summer air conditioning system and they favor using the FHA five year plan.

One of the strongest points used in the Frazier sales presentation is the availability of its well trained service department, which operates on a 'round the clock basis.

Showroom Adds Support

Customers are invited to visit the company's showroom to see the large array of heating and air conditioning equipment on display.

The showroom extends the full width of the building which faces a main thoroughfare. The large, full height windows make it pos-

sible for people passing the showroom to get a full view of equipment on display.

In Mr. Frazier's opinion, the large showroom is well worth the cost because it is big enough to catch and hold the attention of passing traffic.

The front of the building is covered with white tile and this is kept clean to give the appearance of being new. Actually, the building is 10 years old. The sign prominently displays the company name and the services it offers.

Trucks Tell Sales Story

The company now has 13 trucks (the newest is equipped with a hydraulic lift gate) and three station wagons. Each vehicle prominently displays the company name, the services it renders, and the company trade name, "Frazier the Furnace Man."

This slogan is an outgrowth of the time when the Frazier company specialized only in heating equipment. Because of the long-time acceptance of this motto by the community, it is still used to convey the message that heating and central summer air conditioning are all part of the same industry.

TV Uses Testimonials

Television commercials are based around photographs of recent installations made by the company and use the theme, "This is the proud owner of a Frazier air conditioning system."

Frazier has found that people who have recently had a summer air conditioning installation enjoy the publicity and are willing to sign the necessary advertising release to permit their name and a picture of their home to be used on the television broadcast.

Radio Has Pulling Power

The effectiveness of the radio program was felt when a man 20 miles away insisted the Frazier

company install summer air conditioning for him. He said that he had heard one of their advertising programs on the radio and liked the promise of comfort they offered. He wanted it installed by them despite the additional cost of sending a crew 20 miles beyond their working limit.

Newspapers Stress Comfort

Newspaper advertising is concentrated between June 14 and July 28, during which time 15 insertions are made (about three times a week).

Each ad is three columns wide and three inches deep. The ads use cartoons to illustrate a homeowner's discomfort and explain how it can be avoided.

The sales message is based around keeping the whole family in a cool, clean and healthy atmosphere.

Direct Mail Gets Attention

Direct mail pieces are designed to attract the home owners and to separate them from other types of mail sales pieces.

Frazier's direct mail literature is illustrated in red and black with various shades of these two colors used to achieve a four-color effect.

Adequate white space helps to set off the main points of the sales message, which is based around



BUILDER INFORMATION is available from a price book kept up-to-date by two bookkeeping department employees

the theme of complete year 'round air conditioning for the whole family.

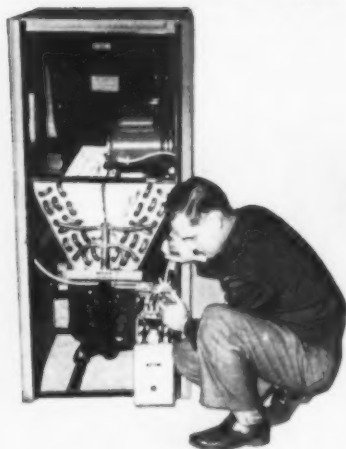
Salesman Tells Reasons

The prime example of Frazier's effective sales promotion program was when a salesman applied for a position with the company. He said: "I kept hearing your ads on radio and seeing them on TV, and knew that this promotion would be helpful to me as a salesman working for your company. I also found it difficult to sell against your company in my previous job, and I said to myself, 'If I can't lick them, then I'll try to join them.'"



EACH OF FRAZIER'S 15 motor vehicles prominently display the company's name, slogan and services it offers

PRACTICAL APPLICATIONS for engineering, installing and servicing residential cooling systems



By S. W. Reid

**Air Conditioning Engineer
Gilbert Associates, Inc.**

Reduce Repeated Service Calls By Avoiding 'Mental Short Cuts'

Many follow up calls can be avoided if no preconceived opinion is formulated prior to a complete diagnosis of the problem

IT IS HUMAN NATURE to develop both physical and mental short cuts for solving everyday problems. Both types tend to make most repetitive-type jobs easier, but the mental short cut can sometimes cause us to jump to conclusions without full consideration of all the facts.

For example, a flat tire is not always the result of a puncture —

sometimes it is caused by a loose or defective valve — yet, how many times would we think to try the valve before taking the tire to be repaired? An appliance such as a washing machine does not always stop operating because of a motor or control failure. How many service men have been called in such a case only to find a loose plug or perhaps a burned out fuse?

And let's not forget the air conditioning servicemen who "solved" a diminished air flow problem by just cleaning a dirty filter. He found out on a subsequent call that the customer had done some rewiring which resulted in the fan motor rotation being reversed.

This month we will discuss several air conditioning problems

where the serviceman did not find the solution as efficiently as he might have because his thinking was limited by what we will call mental short cuts.

First Problem

The first problem concerns a residential installation consisting of a 5 ton self contained unit that was located in the basement, and an outside cooling tower. The system was installed and checked out before the start of the cooling season. Service reports of the start-up showed nothing unusual.

At the height of a protracted hot spell, the dealer-contractor received a call from the owner who stated his disappointment with the performance of his unit, saying that it was not able to carry the same house temperature it had held earlier in the season. The dealer-contractor recalled that this particular job had been very carefully engineered and expressed his surprise and disappointment. He assured the owner that a serviceman would check the job that same day.

Preconceived Solution

The dealer-contractor called in his service manager and they concluded that one very possible cause of the difficulty would be fouling of the condenser tubes. This conclusion was passed on to the serviceman who was sent to the job with the necessary condenser cleaning equipment.

On the job, he checked the thermostat and noticed the space temperature was 5 degrees warmer than the instrument setting of 78 F which was the design temperature. Next, he selected a register near the unit discharge and by using his service thermometer found that air was being delivered at 69 F.

In the basement, he found the unit in full operation. Noting that the condenser water circulating

pump was operating, he held one hand on the pipe carrying water to the condenser and the other hand on the pipe carrying it away. From experience he could tell that there was less difference in temperature between the two than there should have been.

Quick Conclusion Reached

Since the air conditioner contained a sealed system with no provision for gages, the serviceman had about exhausted the possibilities for checking. To this point he found an indication of high evaporator temperature in the high register temperature. He also found an indication of low capacity because of the relatively low rise in water temperature passing through the condenser. Both of these clues seemed to confirm the prediction of his supervisor that the trouble was a dirty condenser. This thought was confirmed when he found the compressor discharge line was warmer than normal.

By reviewing these facts, the serviceman reasoned that if the condenser tubes were dirty, the condenser capacity would be reduced. This would cause the compressor to operate at a higher than normal head pressure which would, in turn, reduce compressor capacity and cause it to operate at a higher evaporator temperature. The overall reduction in capacity would account for the small differential in condenser water temperature, since the quantity of water was constant, but the amount of heat put in to it was decreased.

Erroneous Presumption

Convinced that he had correctly analyzed the problem, the serviceman proceeded to clean the condenser tubes by introducing a scale remover compound to the circulating water. Although the compound contained a color indicator by which the serviceman might have determined the effectiveness of his treatment, his serv-

THIS SPECIAL SERIES

... on subjects of interest to residential air conditioning dealer-contractors is based on the author's wide experience and on constant analysis of the field by American Artisan's editors.

IT ALL BEGAN

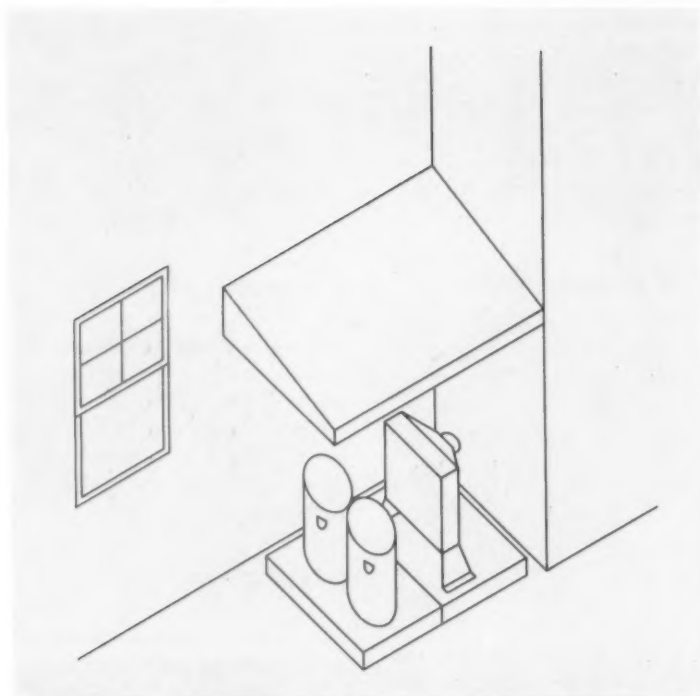
... with a complete rundown on fundamentals in 20 articles beginning in August, 1952 American Artisan, describing basic operation of air conditioning equipment.

SPECIFIC PROBLEMS

... treated in the next phase of the series covered maintenance, service, installation and management.

NOW PRACTICAL APPLICATIONS

... to solve common problems which have been experienced by the author and by dealer-contractors are covered in the current selection of case histories, procedure outlines and specific examples.



RESTRICTED AIR FLOW to air cooled condenser caused by trash barrels being located in the air stream resulted in a rise in inside temperature

ice report gave no indication that this was observed. It stated that he drained and flushed the system, and left the job assuming that it would function properly.

Unfortunately, the problem had not been solved. The owner found it necessary to phone again within a day or so when the hot weather hit another peak. This time, the serviceman came without a preconceived solution. He started by carefully rechecking the symptoms he had observed on the previous visit — the relatively warm temperature of the conditioned air, the low water temperature rise through the condenser, the hot discharge line — and found that they remained. The symptoms still seemed to point to the condenser, but he knew now that the trouble was not caused by scale on the tubes.

Considers Other Causes

Turning the matter over in his mind, the serviceman remembered

two other possible causes of the symptoms he had observed. One was the presence of non-condensable gases, largely air, in the system. The other was an overcharge of refrigerant.

Air in a refrigerating system collects in the condenser where it raises the condensing pressure and thereby decreases system capacity and efficiency. The higher condensing pressure would also account for the correspondingly high condensing temperature sensed by the serviceman when he found the hotter-than-normal discharge line. The reduced compressor capacity at the higher condensing pressure would account for the lower-than-normal condensing water temperature rise observed.

The presence of air in a system can be detected with a gage and a thermometer. The former must be placed to read pressure in the condenser and the latter is strapped to the liquid line. With the compressor shut down, water is circulated through the condenser until

there is no rise. Under these conditions, the saturation temperature corresponding to the gage pressure should be the same as the temperature of the liquid line (within a reasonable tolerance of 1 or 2 percent). If the temperature corresponding to the gage pressure is higher than the liquid line thermometer reading, the presence of air is indicated. The best way to remove air from a small system is to blow the entire charge then reevacuate and recharge.

Elimination Determines Cause

Realizing that he could not make a check for air as described above because there was no gage connection in the system, the serviceman thought the final possibility might be an overcharge of refrigerant. He reasoned that excess refrigerant in the system would accumulate as liquid in the condenser, since in this case, the condenser shell served as a receiver. If the excess was large enough, the liquid level would cover some of the tubes, eliminating them from their intended condensing duty. The effect would be the same as if a smaller condenser were used. Head pressure would be up and capacity down.

How could the presence of excess liquid refrigerant be detected? The serviceman recalled that the condensing process takes place at constant temperature. Therefore, there is ordinarily very little difference in temperature between the top of the condenser shell containing vapor and the bottom containing newly formed liquid. If, however, the liquid were to lie in the bottom at a level high enough to be cooled by some of the condenser tubes, then there probably would be a considerable temperature difference between these spots.

Checks for Overcharge

After running the unit a time, the serviceman felt the top and

S. W. Reid —

"The serviceman should follow an orderly check out procedure and not inspect equipment that most frequently causes trouble"

bottom of the condenser. This was it! There was an easily detectable temperature line well up from the bottom of the shell. For some unknown reason, this particular new unit left the factory with a considerable overcharge of refrigerant which was not detected in normal factory testing.

Since there was no way the serviceman could release part of the unit charge and retain exactly the correct quantity, it was necessary to release all of it and recharge with the factory specified amount. This procedure was described in some detail in last month's article. Needless to say, the corrections overcame the difficulties and the unit performed to the satisfaction of the owner. Subsequent operation has given no indication that condenser scaling is going to be a problem as originally feared.

Second Problem

The second problem illustrates how a mental short cut can lead to a blind alley in another residential installation. The equipment consisted of a compressor and coil mounted in a cabinet with connections for duct work from a warm air furnace. The condenser was air cooled and located outside the house. The components and connections between the condenser and the compressor-coil unit were the factory prepared type and required no field charging of refrigerant.

This installation had behind it two successful cooling seasons. About midway through the third season, the owner requested that a serviceman call to determine why the house temperature was not as low as it should have been. He also said he had compared his current power bills with those of

the previous years and had noted a moderate increase for which he could not account.

Used Experience As Guide

The serviceman, after talking with the owner and making his own observations concluded the only thing that could cause the symptoms would be dirt accumulating on the condenser coil. He did not apply gages, but based upon his experience, he could tell that the condenser was "running hot". Accordingly, he cleaned the condenser, lubricated the motor and left feeling assured that he had solved the problem.

If the serviceman had kept a more open mind on his first visit, he would not have had to return, in response to a second call from the owner, to find the real cause of the difficulty.

The first clue came when he was reviewing the job file with his service manager in search for just such a lead. In the file was a sketch showing the proposed installation of the air-cooled condenser. On the sketch was a note which said, "Existing concrete pad and roof". The serviceman remarked that the pad and roof looked new when he saw them last, in fact, he was certain that part of the roof had not yet been painted. He also remembered that

the pad and roof looked larger than those shown on the sketch.

At this point the service manager recalled that the roof and pad were older than the cooling installation because the owner had originally constructed them to provide a place to store two rubbish barrels. These remarks were the key to the puzzle. Both concluded that the owner had extended his pad and roof to provide a new location for his trash barrels. They were now kept directly in front of the condenser and caused the hot air to recirculate. By coincidence, the barrels were at the curb when the serviceman had originally called and had not been returned to their normal location.

Follow Check Out Procedure

The purpose of this article is not to show how several tricky service problems are solved but to illustrate how the perfectly human tendency to use short cuts sometimes makes the solutions to simple everyday service problems difficult to come by. The serviceman might well think of the check out air planes are given just before take-off. The pilot does not casually check only those few major instruments and controls that most frequently show or cause trouble. He checks everything by following an orderly check out procedure.

What Is 'Air Conditioning'?

True air conditioning provides comfort in all seasons, according to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers. ASHRAE defines air conditioning as:

"Air conditioning is the process of treating air so as to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space."

CHECK THOSE SPECS



CONFERENCES OVER SPECIFICATIONS frequently produce more economical ways of doing jobs. Cliff Reuschlein (left), vice president, Hyland Hall & Co., shows George Hall, president, improvements uncovered in checking the specifications

Here are two valuable check-lists which will help you minimize costly errors and catch omissions of parts and operations before you submit a bid for sheet metal work. Special conditions, foreseen in pre-bid specification check, can be handled with minimum effort and loss of time and profit

THE BIGGEST RESPONSIBILITY a sheet metal contractor faces in preparing a bid for a ventilating system is making sure all equipment and work covered by the engineer's specification is included, according to C. J. Reuschlein, executive vice president, Hyland, Hall & Co., Madison, Wis., who uses a detailed check-list to make sure that the estimate includes not only the equipment and work required but also the identifying number of each piece of equipment needed. Each ventilating system estimate follows a set procedure.

Is Job 'Clean'?

Step 1—Examine plans and specifications to see if the job will be a "clean" or an undesirable one. Has it been well-engineered,

or is much of the installation left to the imagination?

Is Work Assigned Properly?

Step 2—Study each section of the specifications to determine if all sheet metal work is listed under the jurisdiction of the sheet metal contractor.

Any Alterations?

Step 3—If alterations in both the plans and the specifications are in order, contact the architect's engineer and outline recommendations. If the engineer approves the suggestions, alterations are made and a copy of the amended plans and specifications is sent to the engineer for his written approval of the work involved.

Takeoff and List

Step 4—Takeoff ductwork and list all equipment. Each section of duct is listed in the proper category according to dimension and length on a tally sheet. All quantities of each type of duct are listed in one column under the appropriate heading. Quantities in each column are totaled to determine the number of feet of duct required. This figure is entered on the estimating sheet where it is later converted to pounds of metal required, then multiplied by a factor which produces the total labor cost to fabricate and erect the air handling system.

A conversion factor is used if the number of small ducts is greater than the number of large ducts required. Other factors are applied to the number of fittings

ESTIMATE CHECK-LIST FOR AIR HANDLING JOBS
avoids overlooked parts and operations

Ductwork

- a) High velocity
- b) Low velocity
- c) Under-floor
- d) Blowpipe
- e) Flexible tubing
- f) Special systems
 - 1) Hangers — reinforcing

Housings

Penthouses (metal)

Special enclosures

Drip pans

Canvas connections

Access panels (for ductwork)

- a) Hardware

Access doors

- a) Hardware

Acoustical insulation

Metal chimneys (10 ga or lighter)

Breechings

Smokepipes

Barometric dampers

Dampers

- a) Splitter
- b) Volume
- c) Fire
- d) Back pressure

Specialties

- a) Damper operators
- b) Special hardware
- c) Belt guards
- d) Vibration isolators
- e) Thermometers
- f) Others

Hoods

- a) Kitchen
- b) Laboratory
- c) Equipment
- d) Special

Roof outdoor air intake hoods

Roof exhaust hoods

Roof curbs

Roof flashings

Air grilles, registers

and diffusers

- a) Grilles
- b) Registers
- c) Diffusers
- d) Door grilles
- e) Transfer grilles
- f) Baseboard diffusers
- g) Special outlets and inlets

Airturns

Deflectors

Ventilating equipment

- a) High velocity control boxes
- b) Sound absorbers
- c) Roof ventilators
 - 1) Gravity
 - 2) Power
- d) Wall exhausters
- e) Blowers
- f) Induced draft fans
- g) Other fans
- h) Warm air furnaces (and humidifiers if not specified elsewhere)
- i) Filters
 - 1) Mechanical
 - 2) Electric
 - 3) Permanent
 - 4) Disposable
- j) Deodorizers
- k) Paint booths and exhaust system
- l) Dust collectors and exhaust system
- m) Garage tailpipe exhaust system
- n) Other air handling equipment

Auxiliary equipment

- a) Starters, relays, switches, etc.
- b) Equipment vibration isolating pads

- c) Filter cleaning and charging tanks and adhesive

Temperature control system

- a) General description (pneumatic, electric, dual, etc.)
- b) Air piping
- c) Electrical wiring
- d) Equipment (thermostats, etc.)
- e) Air handling controls (separate sequence for each type; dampers)
 - 1) Unit heaters
 - 2) Cabinet heaters
 - 3) Unit ventilators
 - 4) Heating and ventilation units
 - 5) Coils
- f) Exhaust fans
- g) Domestic hot water heater
- h) Day-night change-over and zones
- i) Control panel
- j) Final requirements
- k) Guarantee

Combustion air

Thermal insulation

- a) Equipment covering
- b) Duct covering

Electrical work

- a) Motor
- b) Starters and relays
- c) Controls
- d) Division of responsibility

Finishing

- a) Lubrication
- b) Testing, adjusting, balancing
- c) Identification and instructions
 - 1) Operating instructions
 - 2) Maintenance in-

structions	2) Other contractors	a) Excavation
3) Tags and charts	3) Roughing in requirements	b) Backfilling
4) Coding	4) Connection requirements	c) Excess earth, etc.
d) Housekeeping and cleanup	5) Handling and placing	d) Damage and repair
e) Inspection		
f) Guarantee		
General and special condition coverage	Codes and permits	Concrete work
a) Temporary heat, lights and power	a) Local codes and permits	a) Tank pads
b) Protection of system during construction		b) Equipment bases
c) Equipment installed by others	Drawings	c) Others
1) Owner	a) As-built drawing requirements	Cutting and patching
		a) Cutting
		b) Patching
		c) Other openings
	Excavation and backfilling	Wall and floor openings and boxes
		Alternate bids

VENTILATING AND AIR CONDITIONING

specifications check-list spotlights areas for improvement in plans

Basic conditions	Auxiliary equipment	Acoustical insulation
General requirements	Electrical work	Air grilles, registers and diffusers
General and special condition coverage	Tests and cleaning	Ventilating equipment
Scope of the work	Identifications and instructions	Specialties
Codes and permits	Lubrication	Miscellaneous
Drawings	Housekeeping and clean-up	Equipment by others
Cutting and patching	Inspections	Thermal insulation
Wall and floor openings and boxes	Guarantee	Temperature control system
Excavation and backfilling	Ventilating	Alternate bids
Concrete work	Sheet metal	

required, and to job conditions, size and desirability of the project. These conversion factors are constantly checked for accuracy by reviewing actual costs on completed jobs.

List Equipment by Size

In an equipment tabulation sheet, which is filled in at the same time as the duct tally sheet, all equipment including registers, grilles, blowers and other parts are listed in separate columns, according to size. The cost of this equipment is determined from catalogs, price lists and quotations, then totalled to find actual equip-

ment costs. All costs are next totalled. To this total is added the calculated overhead and then the profit to arrive at the bid to be submitted.

The specifications are reviewed a second time for good measure, and a check-list is used to determine if all of the equipment needed appears in the specification and has been included in the estimate. This check-list is illustrated on this page.

On completion of a job, a balancing test is made and the results are entered in the job file at the company office. A copy is given to the architects if requested.

Adjust Factors to Work

Some factors involved in submitting a bid depend on the type of work required for the installation. Small size duct systems, for example, cost more per pound than large systems. Labor costs more if work must be done on higher floors. Insurance on labor will usually run from 12 to 14 percent of the labor costs. This includes social security, state unemployment, federal unemployment, workman's compensation, bodily injury, property damage, contractor's protective, employee's insurance and vacation trust fund. Other factors to be weighed when a bid is submitted include type of

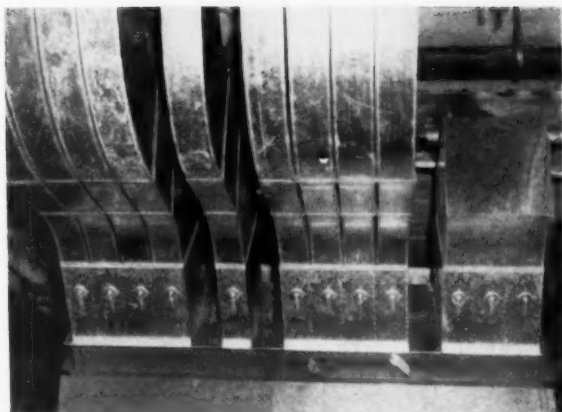
"See that all specifications comply with the recommendations listed in the SMACNA manual"



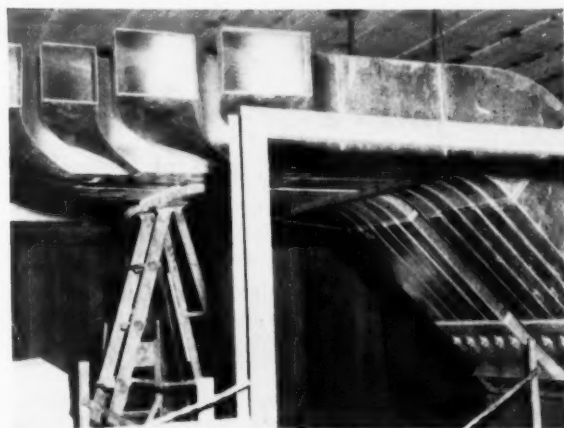
TAKEOFFS FROM OVERHEAD ducts supply private cubicles throughout hospital. Takeoff connections between duct and ceiling diffuser are flexible ducts



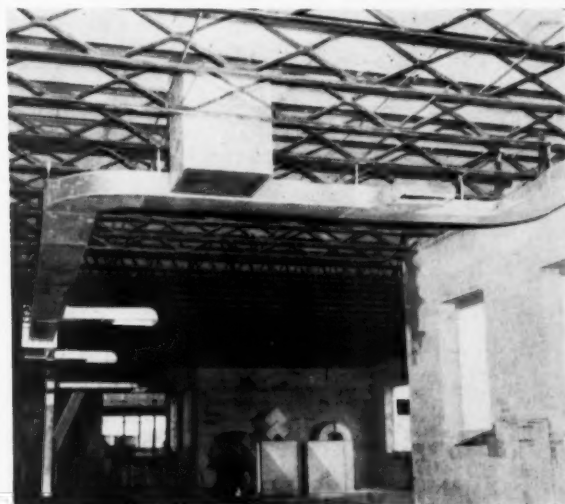
OVERHEAD DUCTS installed above ceiling supply individual wings of hospital. Paul Ziebarth (left) and Hank Beyler, shop foreman, inspect transitions required for job



SPECIFICATIONS CALLED FOR INDIVIDUAL trunk lines to each area, complicating assembly and installation of ducts. Up to a dozen individual branches are supplied from certain units



NARROW DUCTS (4 in. wide, 14 in. deep) form graceful pattern as they are converted to 7 × 8 in. rectangular trunk lines



MECHANICAL EXHAUST SYSTEM FROM TOILETS is connected to roof power ventilator plenum (square duct at top of photograph)

check those specs

building, travel expenses, seasonal expenses, overtime, special safety equipment such as scaffolding, protection of existing equipment, tool shack, scaffolding and cartage, permits, temporary heat and light, and cleanup.

Use SMACNA Manual

In checking the specifications against the plans, Mr. Reuschlein makes sure all ducts are specified to meet the requirements as outlined in Table 1, Recommended Sheet Metal Gages for Rectangular Duct Construction, from the Duct Manual and Sheet Metal Construction published by the Sheet Metal and Air Conditioning Contractors' National Association, Elgin, Illinois. He ascertains that reinforcement of all ducts to prevent buckling, breathing, vibration and unnecessary noise complies with the duct manual plates, and that longitudinal and cross joints, elbows, transitions, etc., all comply with the recommendations in the SMACNA manual.

Dampers Checked Carefully

He also checks volume dampers at all branches and at all supply, return, exhaust or transfer openings when they are specified for

proper balancing of air distribution. He finds out whether single blade or multiblade dampers are required and if devices for locking or holding the damper in its proper position have been included in the specifications.

Checks Convenience, Safety

He makes sure access doors are installed in the ducts at all fire dampers, checks on reheat coils, automatic dampers, and access to the interior of ducts. Test opening locations are checked to be sure readings of air velocities, static pressures in duct, etc., can be made easily. Supply registers and return grilles are checked for location, construction, and gasketing to prevent leakage. Specifications for fans, fan motors and drives are compared with the air capacities required and static pressures involved. Mr. Reuschlein reviews the specifications for wire screen doors over the inlets of double inlet fans, and for isolation bases for fans and fan motors to reduce mechanical noise transmission. Safety guard specifications are examined to see if the materials to be used will provide the safety required. Flexible connections, acoustical insulation, thermal insulation, etc., must be

checked to see if they conform to the recommendations in the SMACNA duct manual.

Anticipates Special Jobs

In spite of all these precautions to assure that basic specifications for good air distribution are met, the sheet metal contractor must always be alert for special conditions and make sure they are covered in the bid.

Such a job was recently completed by Hyland, Hall & Co. at the Central Wisconsin Colony and Training School for small children. This heating and ventilating system called for a number of special features to meet specific requirements of the facilities.

For example, heated air had to be supplied to small cubicles for specialized treatment, and to toilet facilities, which were more numerous than normally encountered in hospitals and similar institutions.

Install Individual Trunks

All equipment was located in the basement and tempered air was delivered through individual trunklines to the space above the ceilings of first floor rooms for overhead air distribution. This type of air distribution system appeared to be the most flexible arrangement for handling the varying loads as the rooms were used for different purposes.

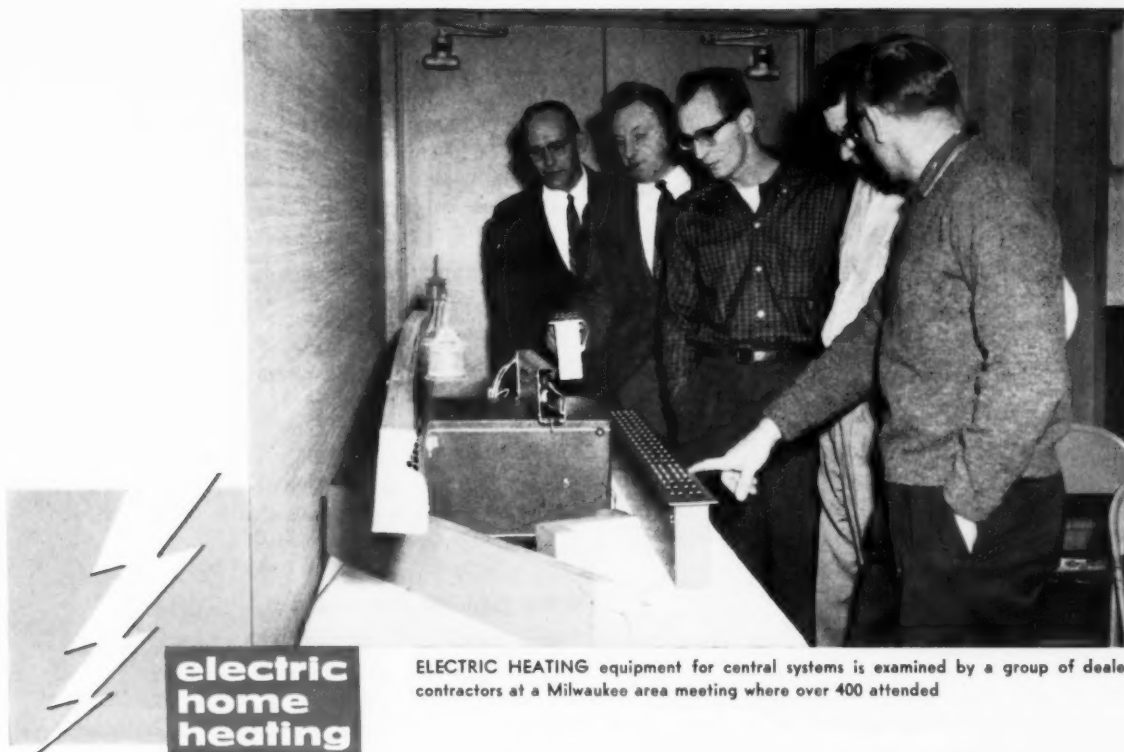
Thus, it's not uncommon to find a dozen small trunk ducts taking off from the equipment plenum, each containing its own quadrant and damper in addition to the automatically controlled face and bypass zone dampers.

Such arrangements not only complicate installation procedures but also increase the amount of work involved in fabricating the trunkline. These conditions also must be considered when the estimate is prepared.

The check-lists used by Hyland, Hall & Co. assure proper engineering and bidding.



DUCT TURNING VANES are installed according to recommendations in SMACNA duct manual, under supervision of shop foreman Hank Beyler (left)



ELECTRIC HEATING equipment for central systems is examined by a group of dealer-contractors at a Milwaukee area meeting where over 400 attended

Insulation Requirements for Electric Heating Affects Size of Air Conditioning Equipment

Added thickness of insulation not only adds to winter operating efficiency but reduces initial equipment and operating costs

"ELECTRIC HOME HEATING is making a strong bid in many sections of the country as the 'heat of the future.' Better and lower-cost equipment, improved techniques such as the central warm air distribution system, and more effective thermal insulations have significantly reduced the cost of heating electrically.

"To use electricity efficiently, a house should be extra well insulated, very tight, and of moderate size. Insulation reduces the heat loss of the house, the annual heat requirement, the size and cost of the heating equipment and, therefore, the amount of electricity needed.

"An extra well insulated house requires one-fourth less heat as an uninsulated house of the same size, and about one-half less as the homes now generally

considered to be insulated. This additional insulation not only adds to comfort in winter, but will also save money when summer air conditioning is installed."

Thus Glydewell Burdick, secretary, Wisconsin Power and Light Co., opened his address to 410 dealer-contractors from the Milwaukee area and 180 dealer-contractors in the Madison area. Fourteen of these dealer-contractors had traveled more than 80 miles to attend the Madison meeting.

What to Include in Design

A structure economically suitable for electric heating, using central air handling and air treating



ONE TYPE of air distribution system utilizing an electric heating element was described by Dan Lynch who explained the many advantages of the warm air system over straight resistance type heating

equipment should be designed, according to Mr. Burdick, to include:

- 1) A central blower capable of handling, silently at low velocity and pressure, a total air circulation of about five air changes per hour at low speed, and eight air changes per hour at high speed.
- 2) An air mixing chamber or room to contain the centrally located equipment described.
- 3) A main plenum or duct leading from the blower to branch ducts leading to the several rooms.
- 4) An electric heater and duct thermostat in the plenum, to temper mixture of return air and fresh air to a control point of perhaps 68 to 72 F before delivery of air to branch ducts and rooms.
- 5) A germicidal lamp unit in the plenum.
- 6) An electrostatic air cleaner upstream of the blower.
- 7) A mechanical air filter upstream of the electrostatic air cleaner.
- 8) A fresh air intake duct with a capacity of $1\frac{1}{2}$ air changes per hour and a damper which at minimum setting provides $\frac{1}{2}$ air change. Damper con-



HOSTS for the Milwaukee area meeting were wholesalers (l to r) Mac McGarry, Don C. Curtes, Fred J. Engler and W. G. Mills

trolled by in-space (room) humidistat to provide atmospheric dehumidification of the space at all outdoor dew points below 50 F, by increasing fresh air intake to $1\frac{1}{2}$ air changes.

9) A heating season humidifier set free in the mixing chamber, with in-space humidistat control to keep indoor relative humidity at or above a minimum setting of perhaps 30 percent.

10) Either of the following: a) a reheat humidity-control central air conditioner, taking air from and returning conditioned air to the mixing chamber, and controlled by in-space humidistat and cooling thermostat; or, b) a conventional air cooling machine taking air from and returning air to the mixing chamber, and controlled by an in-space cooling thermostat.

11) A straight dehumidifier of about 1 hp capacity, standing free in mixing chamber and controlled by an in-space humidistat with control range of about 50 percent relative humidity.

Other Features of the System

"The proposed system should also include an air distribution and heating system including:

- 1) Branch ducts leading to air diffusers along outside walls, with air volume delivery heavier below glass areas than below plain walls.
- 2) Return air duct inlets located high on inside sidewalls.
- 3) Air ducts and outlets to rooms designed to deliver the air volumes required and with extra capacity where needed to handle the full summer air conditioning load, with means for manually shutting off or reducing air flow in winter when not needed.
- 4) Control of a two-speed blower motor: Manual control with low speed or high speed settings during the heating season. During the summer the blower should run continuously at low speed except when the second stage cooling thermostat calls for additional cooling. In this case the blower will operate at high speed or manually set for continuous high speed.

"Such a system, plus the use of a maximum thickness of insulation in the ceiling (12 in.), in the sidewalls (6 in.) and in the floor ($9\frac{1}{2}$ in.) will make the central air distribution system operating costs fall in the same categories as the cheaper direct resistance electric unit system installed in project type houses.

Almost All Electricity Becomes Heat

"Almost all the electricity used for lighting and appliances is transformed into heat within the home. This reduces the heat that must be supplied by the heating equipment. The heat from the many appliances we use today furnishes about one-third of the

Barnes —

"If a prospect is interested in heating with electricity, sell him a forced warm air electric system."

total heating requirement, even in northern climates, for a home of 1000 to 1200 sq ft that is well insulated and tight.

"Because a well insulated home requires less heat, it can be heated electrically at a reasonable cost. Air distribution systems using electricity as a fuel do cost a few dollars more, but they are well within the reach of most new home buyers. And they are much better than old-fashioned electric heating methods.

"If a prospect is interested in heating with electricity, sell him a forced warm air electric system."

Sponsors and Panelists

The electrical heating program in Milwaukee was sponsored by four wholesalers. Auer Steel and Furnace Supply Co., Milwaukee Stove and Furnace Supply Co., Schwab Furnace Co. and Wisconsin Furnace Supply Corp.

In Madison, the meeting was sponsored by Badger Metals, Inc.; Capital City Culvert Co.; Kleenaire Corp.; and Wisconsin Furnace Co.

Other members of the panels on which Mr. Burdick appeared were E. H. Ahlvin, Madison Gas and Electric Co.; and Bruce Burgess, Wisconsin Electric Power Co. James W. Miner, North Central Sales, moderated the panels and was chairman of the meetings committee that handled the arrangements for facilities, promotion, buffet lunch and other speakers appearing on the program.

Future of Electric Heating

An outline of the history and growth of electric heating and a forecast of future growth was made by Clyde M. Barnes, editor, American Artisan. Mr. Barnes used data for his projected forecast that had been obtained from recognized authorities during 1959 and published in a 20 page special report to the warm air heating industry in the October issue of American Artisan.

Mr. Barnes said, as he presented the figures, that warm air heating dealer-contractors could lose a number of heating installations each year if they did not sell the public on the benefits that a central warm air system has over straight resistance type of electric heating. "If the prospect wants to heat with



PANELISTS review program schedule and outline prior to the electric heat meeting held at Madison. (l to r) Glydewell Burdick, James W. Miner and E. H. Ahlvin

electricity, sell him the system that will provide the best degree of comfort — the central air distribution system," concluded Mr. Barnes.

One type of central warm air electric heating system was described by Dan Lynch, Thermo-Base Div., Gerwin Industries. He outlined the many advantages and versatility of the air distribution system and showed how it could be adapted to meet all the expectations of a homeowner who is interested in electricity for heating.

Several examples of problems encountered in recent central air distribution systems were presented and dealer-contractors were shown how they could handle installations involving similar problems.



GROWTH of electric heating is discussed by dealer-contractors Louis Albrecht (left) and H. F. Iler (right) with speaker Clyde M. Barnes, editor, American Artisan, who outlined the history and growth of electric heating and made a forecast of future growth

SHOW SECTION

OHI Show and Convention

Will Celebrate Industry's 75th Anniversary



Displays and technical sessions will highlight growth of automatic oil heating

DEVELOPMENTS and progress in oil heating will be illustrated in equipment and operating displays scheduled for the 23rd National Oil Heat and Air Conditioning Exposition, sponsored by the Oil Heat Institute of America. The show, to be held at the Coliseum in New York City, opens on Monday, April 4 and will run through Thursday, April 7. At the same time, the Oil Heat Institute will hold not only its 38th annual convention but also its "Diamond Jubilee" celebration climaxing industry observance of 1960 as the 75th anniversary of automatic oil heating.

Upwards of 12,000 visitors are expected to attend the three events. Among them will be heating and air conditioning dealer-contractors, manufacturers' engineers and management personnel, equipment and heating oil wholesalers and distributors, architects, builders, consulting engineers, and representatives from associations serving the industry.

Products to be displayed at the show include residential and commercial heating and air condition-

ing equipment, oil burners, water heaters, air circulating equipment, controls, pumps, motors, nozzles, insulating materials, gages, valves, fittings and many others. The exposition will be open every day from 1:00 to 9:00 p.m.

A special convention session for warm air heating dealer-contractors will feature discussions on ways of combating direct electric heat competition. This panel,

3) The market analyst's view of the electric heating market.

4) Technical problems facing direct electric heating.

5) Competition from the heat pump.

According to Everett Elliott, chairman of the convention committee, direct electric heat may, in time, offer serious competition, and the panel discussions will be the first step in the institute's program to provide assistance to dealer-contractors and others to successfully meet this new competition.

Another panel will be devoted to the modernization of existing equipment and will cover such aspects as depreciation, replacement, etc. Co-chairmen will be Frank Wymbs Jr., president, Hev-E-Oil Burner Distributors, and Robert Beningson, president, Combustion Equipment Associates, Inc.

A program devoted specifically to marketing and specifying for commercial-industrial dealer-contractors, installers and distributors will be under the direction of Milton Way, president, Ray Oil Burner Sales.

Show Hours

1:00 to 9:00

Monday through Thursday

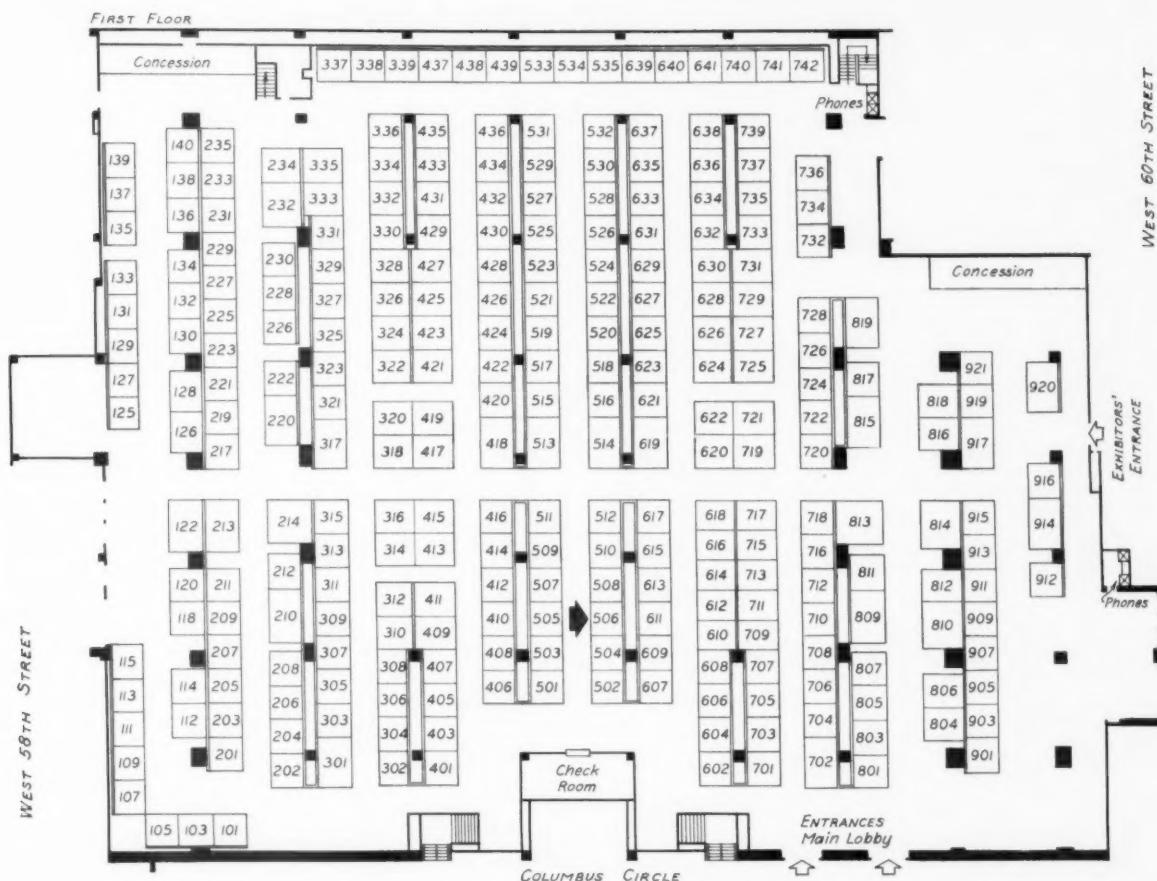
April 4-7, 1960

scheduled for Thursday, April 7, will be moderated by John Olson, vice president, the Nu-Way Corp., and will cover these five areas:

1) Direct electric heat competition from the dealer-contractor's point of view.

2) Electric heating in the commercial-industrial field.

SHOW SECTION



THE EXHIBITORS AND THEIR BOOTH NUMBERS

Aldrich Co.513
 American Artisan506
 American-Standard
 Corp.318-320-417-419
 American Tube Products, Inc. 725
 Auto-Flo Corp.905-907
 Automatic Devices Div. of
 American Machine &
 Metals, Inc.606
 Bacharach Industrial Instru-
 ment Co.727
 Bell & Gossett Co.809-811
 Bethlehem Foundry &
 Machine Co.517
 Bridgeport Chemical Co. 438-439
 Bryant Mfg. Co.801-803-805
 Burnham Corp.
625-627-629-631-633-635
 Burroughs Corp.526-528
 The Carlin Co.636-638
 Cash Valve Mfg. Corp. ..509-511

Cleveland Controls, Inc.312
 Columbia Boiler Co.334-336
 Combustion Control Div.,
 Electronics Corp. of
 America410-412
 Commercial Filters Corp.406
 Deco Vac Mfg. Co.916
 Delavan Mfg. Co.705-707
 Delco Appliance Div.,
 General Motors Corp. ..901-903
 Dole Valve Co.502-504
 Eckhart Mfg. Co., Inc.703
 Eddington Metal Specialty
 Co.720-722
 Edwards Engineering
 Corp.732-734
 Electrol Burner Mfg. Co., Inc. 816
 Emerson Electric Mfg. Co. ..608
 Empire Chemical Products Co. 704
 Fedders Corp. 328-427-428

Field Control Div., H. D.
 Conkey & Co.615-617
 G-E Appliance Control
 Dept.729-731
 General Controls Co. .619-621-623
 General Products Co., Inc. ...634
 Gilbert & Barker Mfg. Co. 602-604
 Gorman-Rupp Co.534
 Gulf Oil Co.523-525-527
 Hago Products232
 Heat-Timer Corp.317
 Hidy-Brown Recorder Co. ...338
 Industrial Combustion
804-806-810
 International Business
 Machines432-434-436
 Iron Fireman Mfg. Co.520
 Johns-Manville530-532
 Johnson Co., S. T.
309-311-313-315

SHOW SECTION

Johnson Degree Day Systems .529
 Johnson Fil-Quick531
 Koven & Bros., Inc., L. O. .302
 Lake Chemical Co. .431-433-435
 Lincoln Air Control
 Products, Inc.640
 Manville Boiler Co., Inc.815
 Mastercraft Industries Inc.329
 McDonnell & Miller, Inc.418
 Minneapolis-Honeywell
 Regulator Co.
710-712-716-718
 Monarch Mfg. Works, Inc. 624-626
 Monroe Calculating737-739
 Morse-Smith-Morse Co.701
 Motorola505
 National Cash Register Co.210
 Oil Equipment Mfg. Co.411
 Olsen Mfg. Co., C. A.
620-622-719-721
 Penn Controls, Inc.401-403
 Plastic Appliance Co.817

Power Cleaning & Equipment
 Corp.920
 Pullman Vacuum Cleaner
 Corp.501
 Purolator Products, Inc.217
 Quality Specialty Co.507
 Radiant Utilities Corp.325-327
 Ray Oil Burner Co.213
 Richmond Plumbing Fixture
 Div., Rheem Mfg. Co.807
 S.O.S. Products Co., Inc.637
 Scully Signal Co.814
 Shell Oil Co.314-316
 Silent Automatic Products220
 Sinclair Oil628-630
 Singer, H. R. B.812
 Skuttle Mfg. Co.424-426
 Slant-Fin Radiator Corp.717
 Smith Co., H. B.733-735
 Socony-Mobil420-422
 Spartan Convector632
 Spencer Boiler322-324-326
 Steinen Mfg. Co.321-323
 Stewart-Hall Chemical Corp. .337

Stewart-Warner Corp.618
 Sundstrand Hydraulics514
 Sun Oil726-728
 Sun-Ray Burner Mfg. Corp.
508-510-512
 Taco Heaters Inc.414-416
 Thatcher Furnace Co.305-307
 Time Saving Fills214
 Torrington Mfg. Co.413-415
 Underwood Corp.819
 Utica Radiator Corp.610
 V & E Products, Inc.709-711
 Walker Mfg. & Sales Corp. 405-407
 Wallace Co., William408
 Watts Regulator Co.519-521
 Webster Electric Co.702
 Weil-McLain Co.421-423-425
 Westinghouse Electric Corp. .813
 White-Rodgers Co.
607-609-611-613
 Williams Oil-O-Matic Heating
 Co., Div. of National
 Union Electric Co.916

38th Annual OHI Convention Program

Park-Sheraton Hotel

Sunday, April 3

2:00 p.m. General Committee Meetings

Monday, April 4

10:00 a.m. Panel, Co-chairman: Frank Wymbs Jr.,
 Hev-E-Oil Burner Distributors, and
 Robert Beningson, Combustion Equip-
 ment Associates, Inc. Topic: *Moderni-
 zation of Existing Commercial-Indus-
 trial Equipment, Depreciation, Re-
 placement*

Tuesday, April 5

9:30 a.m. Technical Division Symposium. Chair-
 man: M. J. Reed, Socony Mobil Oil Co.
 Moderator: Eugene Olson, Delavan
 Mfg. Co. Topics: 1) *Needs of the
 Equipment Industry to Effectively Pro-
 mote the Future of Oil Heating* — John
 Olson, Nu-Way Corp. 2) *Progress in
 the Development of Domestic Fuels and
 Plans for the Future* — Russell Henry,
 Shell Oil Co.

Wednesday, April 6

9:00 a.m. Distribution Division Sales Rally.
 Moderator: Everett Elliott, C. L. Elliott
 Co. Theme: *Increasing Sales of Heating
 Oil and Oil Heating Equipment.*
 1:00 p.m. Luncheon — Grand Ballroom

Thursday, April 7

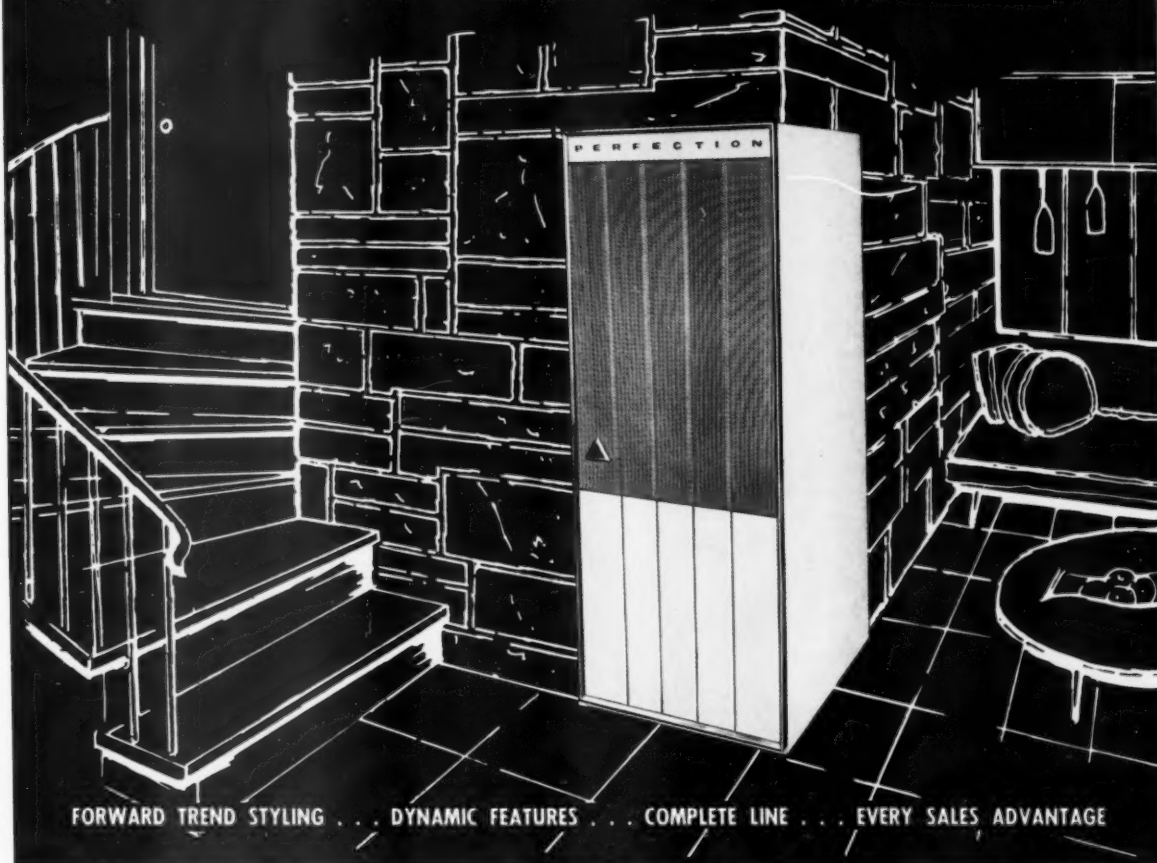
9:00 a.m. Distribution Division Sales Rally.
 Theme: *Increasing Sales of Heating
 Oil and Oil Heating Equipment.* Moder-
 ator: Lavern Schaetzel, Schaetzel Oil
 Co.
 3:00 p.m. Panel for Warm Air Heating Dealer-
 Contractors. (Mezzanine, New York
 City Coliseum). Moderator: John Ol-
 son, Nu-Way Corp. Topics: 1) *The
 Contractor's Viewpoint on Electric Heat
 Competition*; 2) *The Heat Pump as a
 Competitor*; 3) *The Market Analyst
 Views the Electric Heating Market*;
 4) *Technical Problems Facing Electri-
 cal Heating*

Old Timers' Annual Get-together

Tuesday, April 5, 6:00 p.m., Charles Bendix, Chairman
 Grand Ballroom, Henry Hudson Hotel



PERFECTION ...1960



FORWARD TREND STYLING . . . DYNAMIC FEATURES . . . COMPLETE LINE . . . EVERY SALES ADVANTAGE

All yours to sell when you become a Perfectionist

PERFECTIONists SELL FORWARD TREND STYLING

Years ahead of the rest, Perfection's FORWARD TREND Styling is an industry first . . . the *only* furnace selected to be shown as the "heating of the future" at Brussels World's Fair.

PERFECTIONists SELL WITH POWERFUL LOCAL PROMOTIONS

Special promotion programs, specifically tailored to your selling seasons, colorful literature and detailed spec sheets, every display and merchandising help . . . all available when you sell Perfection!

PERFECTIONists SELL EXCLUSIVE FEATURES

Dynamic features make your selling job easier. For example, Perfection's exclusive REGULAIRE® matches heat circulation to demand and ends on-off, hot and cold blasts for top comfort performance.

PERFECTIONists SELL A COMPLETE LINE

Upflow, counterflow, basement or horizontal models in every capacity you need — Perfection has a model to match any installation requirement.

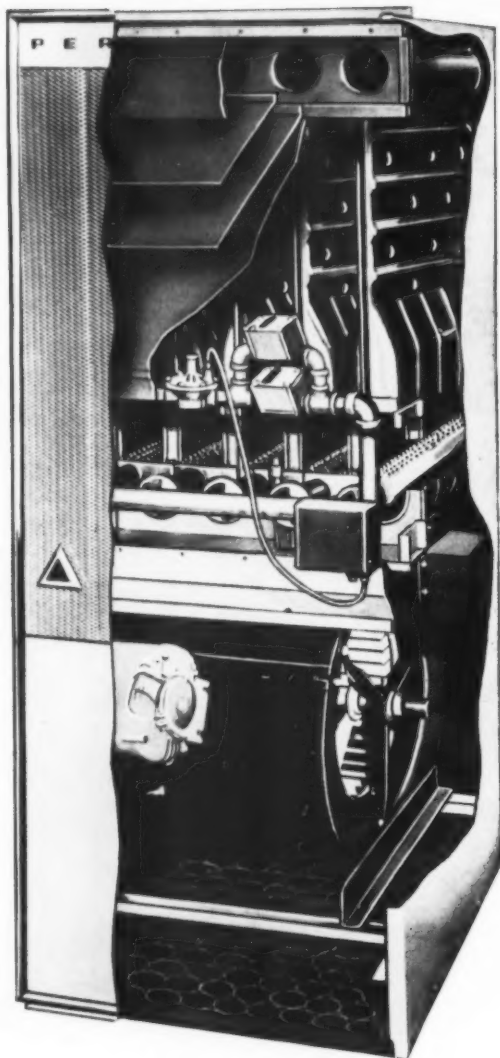


MAKE PERFECTION YOUR LINE FOR 1960



PERFECTION

...1960



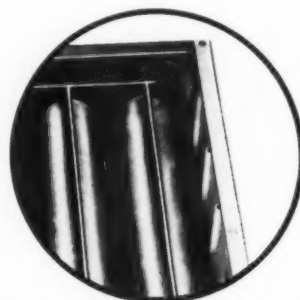
FULL LINE FLEXIBILITY Perfection offers a size and type of furnace to meet every installation requirement — upflow, counterflow, lowboy or horizontal with inputs from 50,000 to 200,000 BTUs. Ample capacity for add-on air conditioning.

IN GAS

Look at every detail for the extra features and quality that make Perfection easier to sell, install and service. Careful engineering inside means overall compactness outside to fit any space. Pre-wired and factory assembled, Perfection is ready to install — fast! Front panels remove quickly for easy servicing. From top to solid base, Perfection backs your reputation with comfort performance and built-to-last dependability.

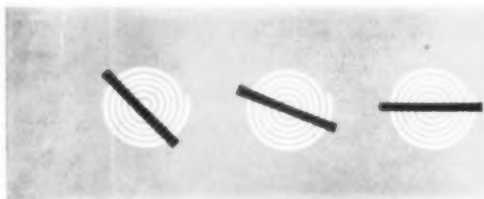


PERFECTION HEAT BANK No ordinary heat exchanger here — the Heat Bank's flame-contoured bottom and turbulent, long flue travel passages are designed for full fuel efficiency. Long life cast iron burners are easy to service, feature exclusive cross-over ports for smooth lightup without "popping."



ALUMINIZED SHIELD FOR ZERO CLEARANCE INSTALLATIONS

An aluminum-finished, interior metal baffle permits zero clearance installation to combustibles. Expansion and contraction noises are quieted by the special ridge design.



PATENTED REGULAIRE® AIR CONTROL GIVES YOU A BIG SALES PUNCH!

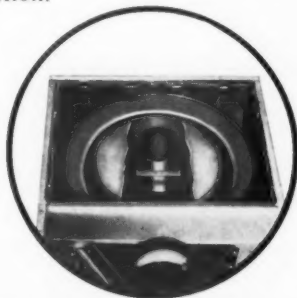
Perfection Regulaire solves one of forced-air heating's most serious problems — stop-start, hot and cold air circulation. Regulaire's bi-metal coil controls an air damper in blower section, permits gradual opening of the damper until furnace is delivering full heat. Only Perfection has this powerful sales feature.

Perfection also manufactures a complete line of conversion burners, air conditioners, heat pumps, water heaters and portable room heaters.

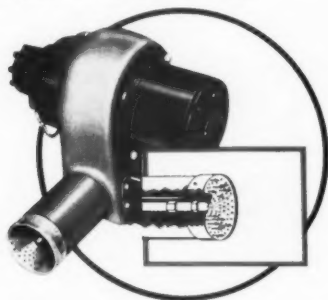
loaded with sales appeal, inside and out

IN OIL

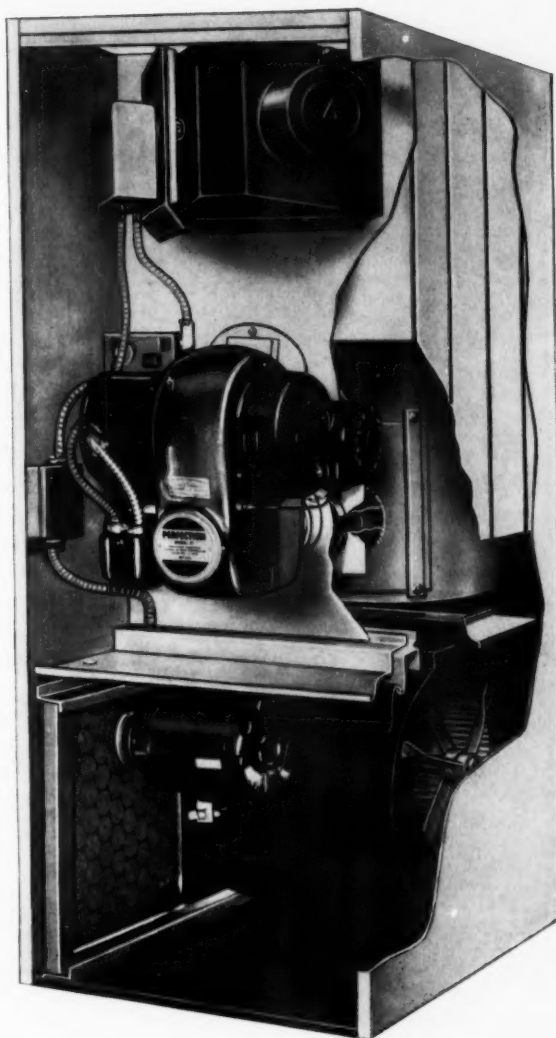
Perfection's dynamic oil furnace line combines FORWARD TREND STYLING with feature-packed internal design for top-notch sales appeal. Perfection engineering standards are your guarantee of true comfort, dependability and economy — the kind of equipment performance that you install with confidence. Perfection oil-fired furnaces are completely wired, completely assembled and ready for installation.



MORE EFFICIENT HEAT EXCHANGER Completely new heat exchanger design features a big capacity, wrap-around radiator for extra long flue travel. Internal baffles in the drum and radiator sections increase heat transfer efficiency, insure full rated capacity. Long life ceramic refractory promotes quiet operation, heats up quickly to efficient operating temperature. Combustion chamber is fully assembled and in-place for easy installation.



MULTI-JET BLENDER SAVES ON FUEL Perfection's hi-pressure oil burner with unique Multi-Jet Blender assures quiet, pulsation-free operation. Special design of stainless steel head mixes oil and air perfectly for top fuel economy. Lower nozzle temperatures give years of added life; vital parts are easily accessible through back of burner.



FULL RANGE OF MODELS AND OUTPUTS Upflow, counterflow and basement models for every type of installation; outputs from 84,000 through 140,000 BTUs. There's ample capacity for add-on air conditioning.



FREE PERFECTIONIST BOOKLET
Tells you all the profitable facts on why it pays to become a PERFECTIONIST. Yours for the asking. Call, write or wire for details.



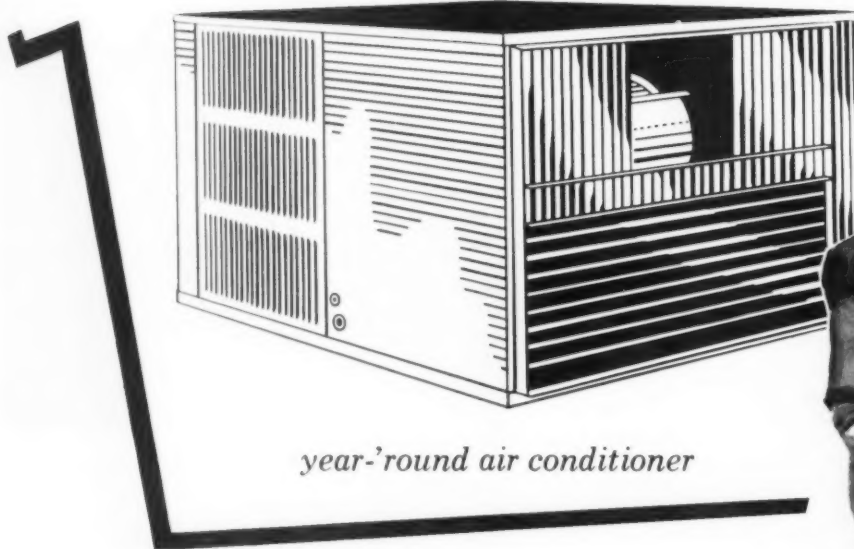
PERFECTION DIVISION

**HUPP CORPORATION
CLEVELAND 10, OHIO**

GUARANTEED COMFORT SINCE 1888

NOW, from WRIGHT-TEMP

*The Incomparable
Wright-Temp Heat Pump*



year-'round air conditioner

Wright Manufacturing Company is proud to announce an important addition to their complete line of fine-quality air conditioning equipment — the Wright-Temp Heat Pump. In 2, 3, 5, 7½ and 10 ton sizes — package and remote models to meet every installation requirement.

Famous Wright efficiency of design and quality of materials and workmanship assure you of increased customer satisfaction and fewer "trouble calls".

The Wright-Temp Heat Pump is built and tested in the Southwest specifically to meet the extreme demands of Southwestern climates. Balanced engineering provides maximum air conditioning efficiency at lower cost in even the most extreme weather conditions.

All Models Calorimeter Rated *Beyond*
A.R.I. Specified Conditions to 115°



For Complete Information write to

WRIGHT-TEMP
MANUFACTURING COMPANY

2902 West Thomas Road, Phoenix, Arizona

"Creating New Climates for Better Living"





Idea Exchange for Dealers, Contractors

These 5 Steps Can Help You Create A Practical Shorthand System

HOW OFTEN have you wished you could make notes in shorthand? How many times have you regretted not having a record of the highlights of a telephone conversation, a discussion with a prospect, or the opinions of an old customer about a job you've done?

Here's a practical shorthand that can be mastered in about half an hour. Based on the techniques used by newspaper reporters, this system can increase your writing speed by 40 to 50 percent. There are just five rules:

1. Abbreviate

Almost every word in the English language can be shortened. Vowels may often be omitted. For example, suppose Mrs. Prospect says, "I've used the living room all winter for the first time since we moved here. That new register did the job." Abbreviated, and in practical shorthand, you'd write: "Ive usd lv rm all wntr. 1st tm snc mvd hr. Nw rgstr did job." With practice, you will find it's easy to train your mind to deal only with the skeletons of words.

2. Omit Unessential Words

A word-for-word transcription of a conversation or lecture isn't necessary. Our daily speech is peppered with frills that, while flavorful, are meaningless or unimportant. Take the following excerpt from a speech:

"I, for one, agree that the salesman's right arm is advertising in all its varied forms: newspapers, magazine's, radio, television, direct mail and circulars."

None of the meaning is lost in this version, which is only one-third as long:

"Slsmn's rt rm is adv: paprs, mags, rad, tv, dir ml & circls."

3. Use Natural Abbreviation

On any typewriter you'll find a host of abbreviations and symbols that can help you cut your writing time. The use of digits instead of words to express numbers goes without saying. But there are other symbols that can save time, such as $\frac{1}{2}$, $\frac{1}{4}$, # (number), %, \$, €, @.

Because of their pronunciation, certain letters and numbers may be

substituted for common words: b (be), r (are, our), u (you).

4. Apply Mathematical Symbols

Quite aside from numbers, mathematics is rich in easily understood symbols. Not only can + and - mean plus and minus, but in certain contexts they may stand for pro and con, more and less, positive and negative.

Similarly, = may signify the same as, stands for.

The simple multiplication sign, \times , can serve for the word times.

Another sign, the arrow, may be used for such expressions as leads into, turns into.

5. Use Letters As Symbols

According to the Handwriting Foundation, less than 100 words make up 50 percent of the average speaking vocabulary. If you can devise a system of letters for the most common nouns, pronouns, conjunctions and prepositions, you have half your problem licked. Many reporters use the following: o (on), f (from), w/ (with), w/o (without), xc (except), nst (instead), bc (because), h (he), w (we).

Just five rules. But they can mean the beginning of a more orderly—and successful—business life. Try them.

B4 u no it, ul be ritn ur own tkt in $\frac{1}{2}$ tme!

Auer "VALUAIRE"

The greatest value in
Baseboard Perimeter Diffusers



LOW, LOW LIST

\$4.50



AUER VALUE-LINE

PERIMETER FLOOR DIFFUSERS

- Lowest cost for economy projects
- Built-in opposed-blade damper
- Delivers "perfect-pattern" air-diffusion
- Available in 2¼" x 12" and 14"; 4" x 10", 12" and 14"

• **ECONOMY PRICE**... Increases profit on regular and development projects where low-cost diffusers are a necessity.

• **BUILT-IN QUALITY**... Top grade materials, rugged construction and aerodynamic engineering are Valuaire features.

• **DUAL-DESIGN**... Valuaire is equally efficient for heating or combination heating-cooling. 18" long it achieves a more efficient air spread than many longer units. Installs snugly against irregular wall surfaces.

• **ATTRACTIVE**... Smooth flowing modern lines blend with any construction. Bufftone finish easily repainted to match interior decor.

• **FAST, EASY INSTALLATION**... Package unit ready to install with only a screwdriver.

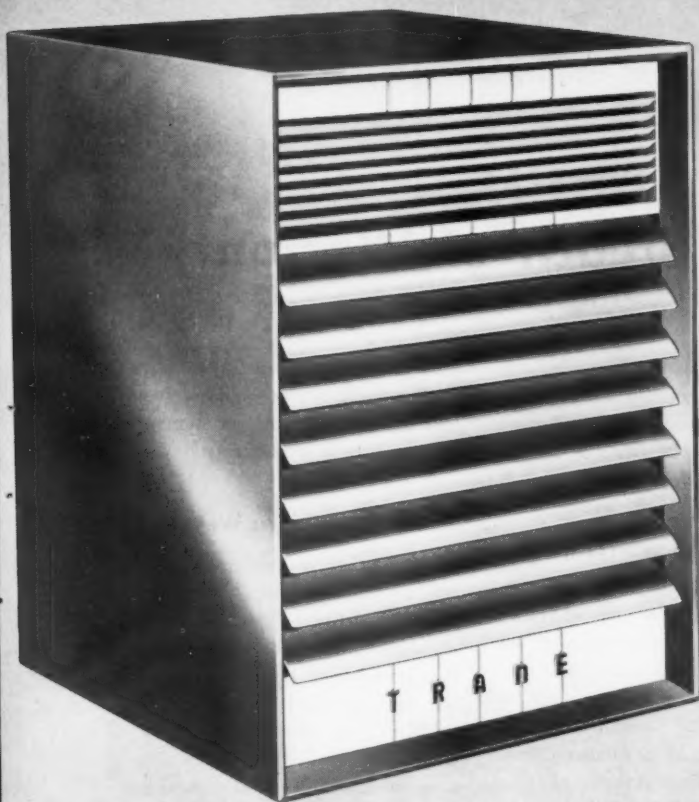
COMPARE: PRICE • DESIGN • PERFORMANCE • CONSTRUCTION
YOU'LL SELECT "VALUAIRE"



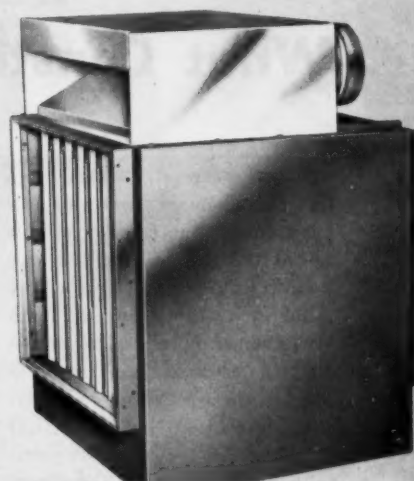
THE AUER REGISTER COMPANY

"REGISTERS AND GRILLES FOR EVERY HEATING AND COOLING NEED"

6603 CLEMENT AVENUE • CLEVELAND 5, OHIO



Propeller-type heater uses a new TRANE Fan that is designed exclusively for unit heaters. Access door on bottom of casing for quick and easy cleaning. Complete range of sizes from 30,000 to 250,000 Btuh input.



Duct type heater for installation in ductwork. Air is delivered by a remotely located air handling unit. Ideal for use with TRANE Self-Contained Air Conditioners. Sizes from 60,000 Btuh through 250,000 Btuh input. Optional equipment features modulating valve or 2-stage valve to control temperatures.

Announcing: A new line of gas-fired heaters from Trane!

Competitively priced propeller, duct and blower types—all with new modern styling, compact design

Here's an all-new line of gas heaters that combines smart appearance with high performance. These new TRANE Heaters are ruggedly built for long life—yet they are light in weight . . . compactly designed for installation where space is at a premium. And these heaters are offered in a complete range of sizes, 30,000 to 250,000 Btuh input.

Available in three types—propeller, duct and blower—these gas-fired heaters feature an aluminized steel, all-welded heat exchanger that assures long, trouble-free operation. The steel, ribbon-type burners have

stainless steel inserts. Burners individually removable.

An exclusive TRANE Control Package available. Provides on-off-automatic thermostat, plus single fustat for short circuit and overload protection. Low and high limit switches are standard. Optional 2-speed unit available with 2-speed switch or 2-stage thermostat to control motor and 2-stage valve on 5 sizes. Motor speed and gas input are balanced for maximum efficiency, economy, comfort.

The light weight of the new heater means more Btu's per pound. Freight costs are lower; and installation is simplified: minimizes the need for expensive structural reinforcement.

Want more facts? Ask your TRANE Sales Office for complete information on the new TRANE gas-fired Heaters; or write TRANE, La Crosse, Wisconsin.

Blower-type heater uses a forward-curved centrifugal fan. For free delivery or ductwork installation; adjustable fan belts to provide proper air delivery against varying static pressures. Streamlined fan inlet for exceptionally quiet operation. Louver-Fin Diffusers increase air throw. Sizes from 30,000 to 250,000 Btuh input.



For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

1. E. TRANE COMPANY, LA CROSSE, WIS. • SCRANTON MFG. DIV., SCRANTON, PA.
CLARKSVILLE MFG. DIV., CLARKSVILLE, TENN. • TRANE COMPANY
OF CANADA, LIMITED, TORONTO • 100 U.S. AND 19 CANADIAN OFFICES

What Constitutes Breach of Warranty?

FACTORY FRESH, new, and with the manufacturer's warranty against defects in manufacture for twelve months from date of operation, was the promise or warranty made in a written contract with his customer by a dealer-contractor in a western state.

When the equipment was delivered, instead of being installed by the dealer-contractor as originally planned and agreed, that portion of the contract was, at the direction of the purchaser, carried out by another contractor.

When put into operation after its installation by this other contractor, the unit worked about two hours, broke a compressor shaft seal and lost its refrigerant. With the replacement of the refrigerant, and another attempt the unit functioned for two days and stopped again. Adjusted again, it operated for six weeks and stopped.

Supervision of the unit and its adjustment was then transferred to the original dealer-contractor who assured the owner that if he was given full control he would have the machine working efficiently.

Purchaser Files Suit

Subsequently, a suit was brought by the purchaser against the dealer-contractor for what he claimed was a breach of warranty in failing to deliver the factory fresh unit and for total failure of consideration.

He contended that this dealer-contractor was liable on an implied warranty of fitness of the unit for the purpose it was intended. The dealer-contractor maintained that his only obliga-

tion was that stated in the contract, "To furnish a new, factory fresh air conditioning unit with the manufacturer's twelve months warranty," which he had done.

Court Upholds Warranty

"What could be more inconsistent with a claim of warranty against the dealer-contractor than employing him on a time and material basis to place the unit in good operating condition. This seems to us to be particularly true under the circumstances of this case, namely, that the dealer-contractor was not permitted to install the unit as originally intended," said the court.

"After threatening to sue the dealer-contractor for refund of the whole purchase price the purchaser instead made a contract to pay the dealer-contractor on a time and material basis to repair and recondition the unit."

Decision Is Supported

In support of this decision, the court referred to a similar incident in the courts of one of the Pacific states several years before. Equipment had been purchased and, as in this case, had failed to satisfy the buyer. As here the seller was asked to make adjustments which he did, charging the customer for the additional labor and material.

When later suit was brought by the seller this same defense of a breach of warranty was set up — an effort of the customer both to have and to eat his cake.

"From the facts it must be held," said the court in that case, "that the customer waived a rigid

adherence to any guarantee. The facts present a clear and complete defense to the claim of damages for the breach of warranty."

Acceptance Carries Weight

In another controversy involving an air conditioner, the merchandise delivered had been of a distinctly different quality than that which had been ordered. In this case the court said:

"The fact of acceptance however, as a matter of evidence may have great weight on the question of satisfactory or sufficient performance. In the first place it raises considerable presumption that the article delivered actually corresponds with the agreement.

"Also, it is some evidence of a waiver of any defect of quality, even if the article did not correspond. If the goods are accepted without objection at the time or within a reasonable time afterwards, the evidence of waiver, unless explained, might be considered conclusive.

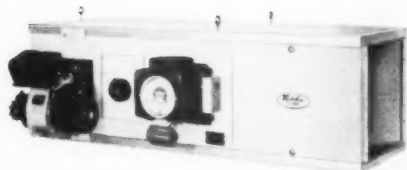
"But if on the other hand the objection is made at the time and the seller notified of the defects and the defects are material, the inference of waiver would be altogether repelled. The law permits explanation and seeks to know the circumstances which induced acceptance. It might be that the buyer was not competent to act upon his own judgment or had no opportunity to do so, or declined to do so as a matter of expediency, placing his dependence mainly, as he has the right to do, upon the warranty of the seller."

[Note: While this discussion applies to actual cases, it should be remembered that legal rules vary in different states.]

UNSURPASSED for Oil or Gas

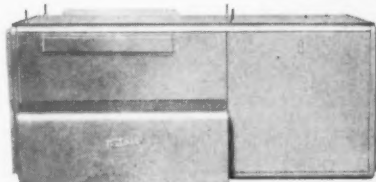
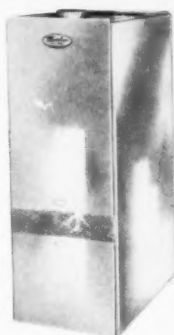
Blue Ribbon LH Series . . . Oil or Gas-Fired

Features Lo-Hi-Boy design with return air compartment. Small, compact units . . . designed for standard installations . . . deliver high heat output. The oil unit features a Cerafelt Combustion Chamber.



Blue Ribbon SCO Series . . . Oil Fired

This dual purpose, oil-fired furnace can be used as either a horizontal or counterflow unit. Stocking the SCO reduces your inventory . . . yet increases your stock . . . because each unit can be used for either of the two applications.



GS Horizontal Gas-Fired

Sectional type heat exchanger and cast iron drilled port burner. This horizontal furnace is the answer to your crawl space, ceiling and attic requirements for a gas unit.



CG Counterflow Gas-Fired

Slotted cast iron burners and drawer type blower. The ideal solution to critical space problems requiring ground floor installation. Fits easily into alcove, closet, or utility room.

Thatcher

WINTER AIR CONDITIONERS

SINCE 1850, ONE OF THE LEADING MANUFACTURERS OF HOME HEATING EQUIPMENT

The Thatcher Full Line includes units for oil and gas; in Lo-Hi-Boy, Horizontal and Counterflow models. They meet today's trend to small compact units with high heat output. Thorough engineering with balanced components, careful assembly and inspection insure satisfactory on-the-job operation. All models factory assembled and wired. Write for details.



THATCHER FURNACE COMPANY
Dept. AA, Garwood, New Jersey
BOILERS • FURNACES • AIR CONDITIONERS

2190



**...provides you with
the performance and
appearance that sells
more profitable jobs**

You get the **FINEST** in Engineering and the **FINEST** in Production Quality when you promote U.S. Registers, Grilles, and Diffusers.

The Efficiency and Perfect Performance of U.S. Register Company Products is conceded by the Entire Industry to **LEAD** and **Excel**.

Get the **Best** at Competitive Price Backed by the Most Satisfactory Service and Quality Production.

Improved Qualities and New Lines are Continually Offered the Jobbers for their Customers from the World's **FINEST** and Largest Source.

Your New No. A Catalog will soon Be Ready. Send in Your Request.



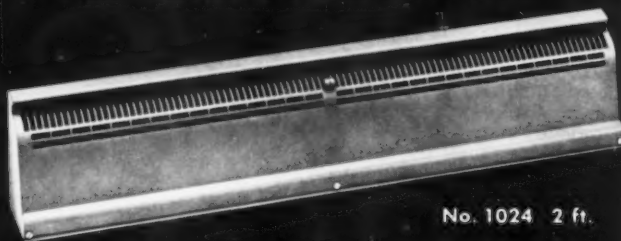
UNITED STATES REGISTER COMPANY



**NEW No. 153 A.C. Register
solves those higher velocity
problems**

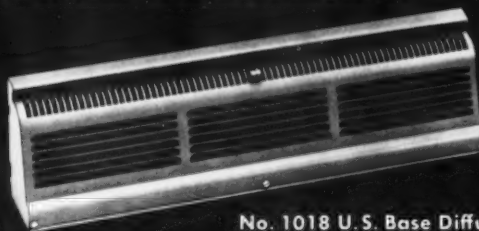
With its "scoop-type" Single-Valve and Tie-Bar FEATURE the New U.S. No. 153 AIR CONDITIONING REGISTER Eliminates "HUMMING" and "STRUMMING" Noises. Safe to use in most Particular Locations where "QUIET" is Essential. All with Less Cost.

**Nos. 1024 and 1048 Base Diffusers
with Increased Free Area produce a
Silent Performance with Great
Efficiency not heretofore Possible
with Perimeter Base Diffusers.**



No. 1024 2 ft.

Recently improved, by adding additional oblong openings, U.S. No. 1000 Diffusers now lead the field in free area, beauty, and power. They are adaptable to use 4", 5", and 6" round supply pipes. Combining of 2 ft. and 4 ft. lengths with special U.S. Connectors will make any desired longer lengths. U.S. No. 2000 Base Intakes have matching design.



No. 1018 U.S. Base Diffuser

When you're on a project Contract where Capacity, Compactness, and Diffusion with economy are more important than the Distribution of Air Flow, the No. 1018 U.S. Base Diffuser will assist in securing the Contract. It's only 18" long. Gives you maximum free area for such a short diffuser.

BATTLE CREEK, MICHIGAN
MINNEAPOLIS • KANSAS CITY • ALBANY

Sell Climate by Chrysler



Dealers who sell Chrysler Air Conditioning . . .

attract more prospects!

Consider this elementary fact about selling: Before you can make sales, you first must have prospects. Now consider this important fact about Chrysler: We believe—strongly—in the power of advertising to create and attract prospects. And, we practice what we preach.

When you sell equipment backed by as much sound advertising, promotion, and merchandising as Chrysler Air Conditioning, you attract more people who are ready and eager to buy. And Chrysler's 1960 program does the complete job for you because it blankets every buying influence.

Want more reasons why your future is safer with Chrysler? Send the coupon for the booklet, "It will pay you to take a long look ahead . . . with Chrysler Airtemp." Or for super-fast service, call your Chrysler Distributor today.

CHRYSLER
AIRTEMP

Airtemp Division, Chrysler Corporation, Dept. N-30, Dayton 1, Ohio



Please rush me a copy of
the "Long Look" Booklet

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

WHAT ASSOCIATIONS ARE DOING



◀ EXCHANGING VIEWS WITH ACTIVE STATE ASSOCIATION workers helps to correlate information and aids in solving local as well as national problems. Joseph D. Wilder (center), executive secretary of the national association, talks things over with Clarence J. Meyer (right), New York State executive secretary, and William C. Schmitt

WHOLESALE ASSOCIATION EXECUTIVE DIRECTOR Wilbur Bull (center) is registered by Fred C. Baumbach (left) and Richard J. Horst ▼



Better specifications

Guide to Quality Workmanship

... **New York State sheet metal contractors, architects and consulting engineers told**

SPECIFICATIONS written to express clearly the type of work to be performed and the trade to which the work should be assigned help the architect serve his customer better. Such specifications assure that the work will be done by the subcontractor best equipped to complete the job in the shortest period and to do the work in such a manner

that the least maintenance will be required during the life of the building. These points were brought out by Joseph D. Wilder, executive secretary, Sheet Metal and Air Conditioning Contractors' National Association, in addressing sheet metal contractors, architects and consulting engineers attending a joint session at the 37th

annual convention of the New York State Sheet Metal, Roofing and Air Conditioning Contractors' Association held in Buffalo.

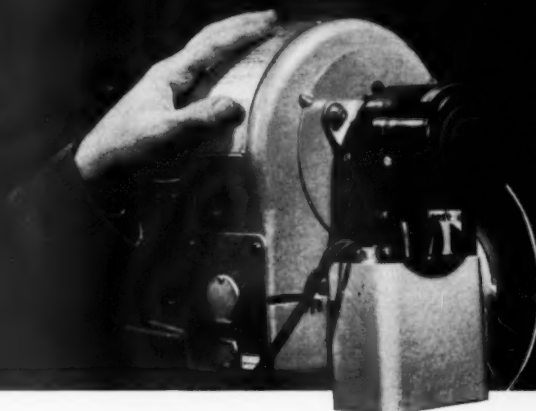
Steps toward the writing of better specifications have been taken by the Council of Mechanical Specialty Contracting Industries, a group composed of the National

(Continued on page 102)



WINNING ENTRIES in the annual apprenticeship contest are examined by (l to r) George Ballard, first vice president; Joseph R. Stiglmeier, contest chairman; and Peter Sturr, second vice president

**flexibility of flame control
...ease of installation and
serviceability**



...sell the BARBER "Contractor" power gas burner

This BARBER sales engineer points out the adjustable orifice, primary air shutter and secondary air shutter as the features that make the "Contractor" unique.

He knows the demonstration helps him sell the burners ease of adjustment and its precise flame control. He knows that by pointing out the adjustable flange, the 4" dia. blast tube, choice of 5", 8", 10" or 15" tube lengths and the combination transformer and relay box — prewired and mounted on the burner, he is really pointing to the features which the contractor wants.

To demonstrate accessibility and fast, easy service of the complete pilot, runner tube and thermocouple assembly, he just removes two connections and withdraws the unit, as illustrated.

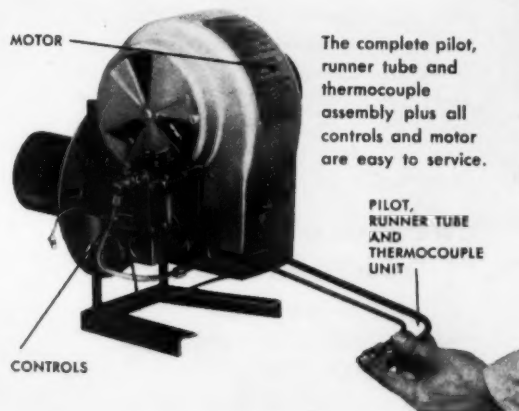
The BARBER sales engineer concludes his sales-making demonstrations with the fact that Contractor models are available in a range from 75,000 to 400,000 BTU's per hour input.

Yes...this BARBER burner was specifically designed

for the contractor...for contractor profits...and for customer satisfaction.

If you don't currently sell the CONTRACTOR... and other leading BARBER burner products... write, wire or phone us now.

Engineered for minimum maintenance and maximum accessibility.



*Manufacturers of
Engineered
Quality Burners
Since 1918*

Barber



The BARBER Manufacturing Co.

1052 EAST 134th ST. • CLEVELAND 10, OHIO
MUlberry 1-8265

Each and every
CRESTOLOY PLIER is
individually tested!



CRESTOLOY END CUTTING NIPPERS
 No. 72, 6". Also in 7" size.



CRESTOLOY HEAVY DIAGONAL CUTTING PLIERS
 No. 542, 7" size only.



CRESTOLOY LONG NOSE SIDE CUTTING PLIERS
 No. 654, 6". Also in 7" size.

CRESTOLOY LINEMEN'S SIDE CUTTING PLIERS
 No. 1950, 8". Also in 6" and 7" sizes.



CRESTOLOY DIAGONAL CUTTING PLIERS
 No. 942, 6". Also in 4" and 5" sizes.

When you choose a CRESTOLOY PLIER you know you are getting top value and proven performance. After rigorous factory testing for ease of cutting, hardness of blades and strength, each tool that passes these tests is tagged with the certifying tag reproduced above. CRESTOLOY PLIERS are available in more than a score of patterns including the five popular types illustrated.



CRESCENT and CRESTOLOY TOOLS are sold by hardware dealers and industrial distributors everywhere. Look for the bright yellow Crescent Display panels and select from one of the world's greatest assortments of quality hand tools.

CRESTOLOY PLIERS are
"Your Fingers of Steel"

CRESCENT TOOLS
Give Wings to Work

*Sign of the Artisan
 Symbol of Excellence*

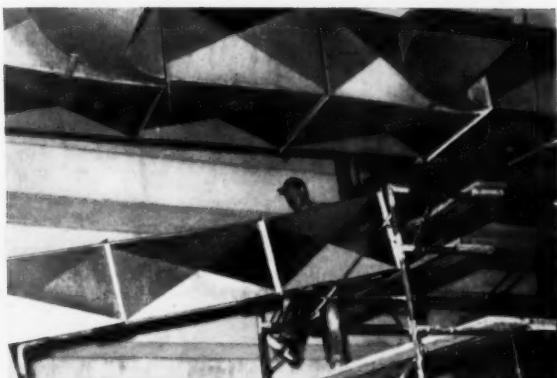


Crescent is our trade-mark, registered in the United States and abroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by
CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK

Why Bethcon Galvanized Steel Sheets are just right for ductwork



EASIER TO FABRICATE than other metals. Readily formed, easily joined by lock seams without tearing, buckling, or wrinkling.



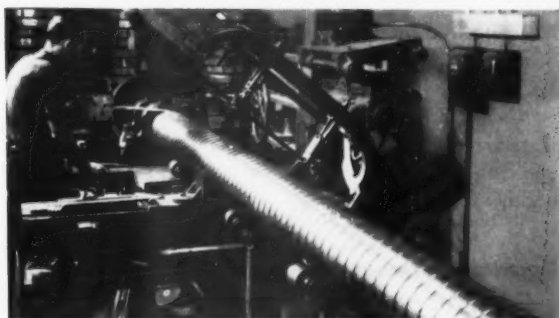
MUCH LESS SUSCEPTIBLE to local surface damage in handling and working. Will not break or flake.



QUICKER TO INSTALL because the greater strength of steel allows longer lengths with fewer supports.



LESS NOISE because steel does not expand and contract as much as other materials.



MORE VERSATILE than comparable metals. Can be formed into spiral pipe, is readily soldered or welded right on the job.



MORE ECONOMICAL both in material and installation costs. Savings run as high as 30 pct over competitive metals.

Bethcon sheets are the product of Bethlehem's continuous galvanizing lines. They are strong but ductile; rigid but workable; rich-looking yet low in cost. Make your next heating, ventilating or air conditioning job a Bethcon job.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL



WITH THE ASSOCIATIONS

(Continued from page 90)



CONVENTION COMMITTEE welcomes its first delegate, J. W. Ridgway. From left are Don McCloskey, Mr. Ridgway, Richard Watson and Charles Buck



ELECTRIC HEATING PANELISTS (l to r) Don Winegardner, T. B. Speaker, Arthur Keller and Ben Flock listen to tape recording with message from W. T. Miller



NEW OFFICERS John Kuharic (left), Ben Flock and Fred Snyder, make plans for 1960



AIR CONDITIONING PANELISTS (l to r) Fred S. Hamer, W. H. Hilmes, Keith Davis and Fred Snyder discuss slide projector presentations prior to convening of session

Electric heating systems

Must Provide for Adequate Ventilation

**... heating specialist
tells dealer-contractors
at Indiana Association's
42nd annual convention**

"ELECTRIC UTILITIES are requiring heavy insulation in houses to be heated by electricity to reduce operating costs," said Professor W. T. Miller, Purdue University. "This requirement results in the decrease in heat transmission desired, but it also eliminates all natural ventilation. This causes an intolerable condition, deleterious to comfort, health and happiness.

Makeup Air Necessary

"We, as heating people, know that recirculated air must be revitalized, and that may be done only by replacing part of the recirculated air with fresh air.

"Good electric heating is in the luxury class, and if it survives the present novelty stage, those who can afford it are going to demand that it deliver comfort, health and happiness.

Electric Heat Needs the Dealer-Contractor

"You dealer-contractors are the people to make it work. If the prospect can afford electric heat, he can afford to go all the way, and that fact offers some profitable business to you. You have more selling points for electric heat than electric heat has for itself. It needs you to survive."

Officers and directors elected by the Sheet Metal and Warm Air Heating Contractors' Association of Indiana are: Ben Flock Hammond, president; Fred Snyder, Lafayette, first vice president; John Kuharic,

(Continued on page 102)

The Most Advanced Feature in Air Cooler History is on G&S 1960 Models Exclusively!

PFP
POLYFILTER TREATED WITH FRAM PERMACHEM

Here's what it does:

The Gaffers & Sattler Polyfilter, treated with a new patented germicide, Fram Permachem, actually kills 99% of all germs trapped in the filter. Special interlocking pattern of selected fibers forms a network of millions of tiny traps that entrap all sizes of pollens and bacteria known to cause nasal irritation. And, teamed with moistened aspen, Polyfilter reduces annoying dust and smoggy irritants in the air. Polyfilter has another quality too, it retards musty odors and mildew formations.

You select from a Complete Line



Bottom
Discharge



Side
Discharge



Window
Model

Order from a full range of bottom and side discharge models—2150 to 16,000 CFM. Also economy and luxury type window models.

You offer a Top Quality Product

Fourteen big features, many of them patented and exclusive, make this the stand-out quality line of the industry. Fourteen big features—a good reason to buy—a good point to sell your customers.

G&S is on the **GO** in 1960!



Executive and National Sales Office
8111 West Beverly Blvd., Los Angeles 48, California

KEEPS
COOL AIR
HOSPITAL
CLEAN



Gaffers & Sattler—Air Cooler Division
8111 West Beverly Blvd., Los Angeles 48, California
I'm interested, please send me literature on your 1960 line.

COMPANY _____

NAME _____

ADDRESS _____

CITY _____ STATE _____

I'm a dealer ☐ Distributor ☐

A-2

DURO DYNE

leads the field!

The Greatest Name in Sheet Metal Specialties



NEW!

"DURO-TROL"†

For installation in exposed areas where smart, modern appearance and ease of adjustment are of prime importance DURO-TROL Air-Flow Regulator is the answer!

NEW!



"DUCT-SCREWS"†

Designed for Sheet Metal men. Tops in quality and holding power. Binding Head . . . sharp points . . . superior hardening plus heavy cadmium plating. Buy the original economical Thousand-Pack.

NEW!



HI-PRESSURE SEALER

Available in handy, disposable caulking gun cartridge to eliminate waste and mess. Cartridge produces a 3/8" bead of sealer under pressure. Also in 1 gallon cans.

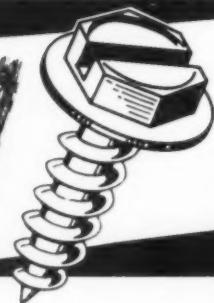
NEW!

ECONOMICAL!
HEAT-RESISTANT!
NON-POROUS!

"ASBESTOSEAL"†

Ideal connector for all furnace installations. Costs less than ordinary asbestos. GRIP-LOC seam to attain greatest gripping action. Asbestoseal is Underwriters Grade asbestos sealed by silver-colored neoprene.

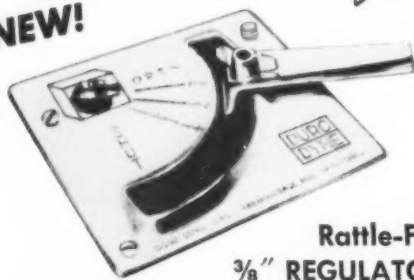
NEW



"DRILL-SCREWS"†

Drill their own holes in metal!
Acclaimed by sheet metal workers coast-to-coast! Drill Screws are installed five times faster than conventional methods! All you need is a 1/4" electric drill and an inexpensive Drill Screw Chuck. Can also be driven manually. Write for samples and full details.

NEW!



Rattle-Free

3/8" REGULATOR SETS*

Super heavy construction of this new regulator and its wedge-lock action prevents damper rattle while it minimizes air leakage. New, eye-appealing design, easy-to-read and easy-to-adjust indicator dial.

* PATENTED OR PATENT PENDING

† T.M.

PLUS

- ★ THE ORIGINAL AND MOST COMPLETE LINE OF REGULATORS, QUADRANTS AND DAMPER PARTS
- ★ PORTABLE SPOT WELDERS NOW WITH BUILT-IN TIMERS

- ★ NEW IA-11 ECONOMY FORMULA INSULATION ADHESIVE

- ★ BLADE KITS AND OPAX KITS FOR MULTI-BLADE DAMPERS

- ★ THE MOST COMPLETE LINE OF FLEXIBLE DUCT CONNECTORS

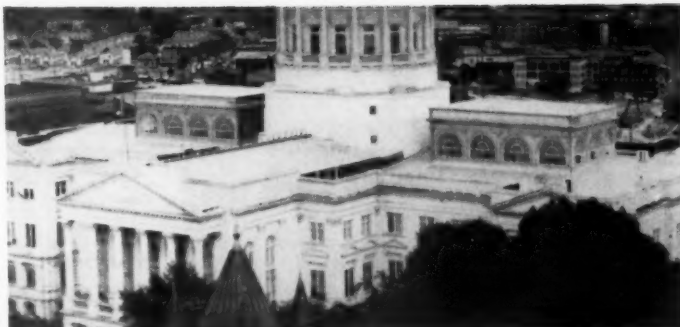
WRITE NOW FOR YOUR COPY OF

NEW FREE CATALOG

DURO-DYNE CORPORATION

Farmingdale, New York





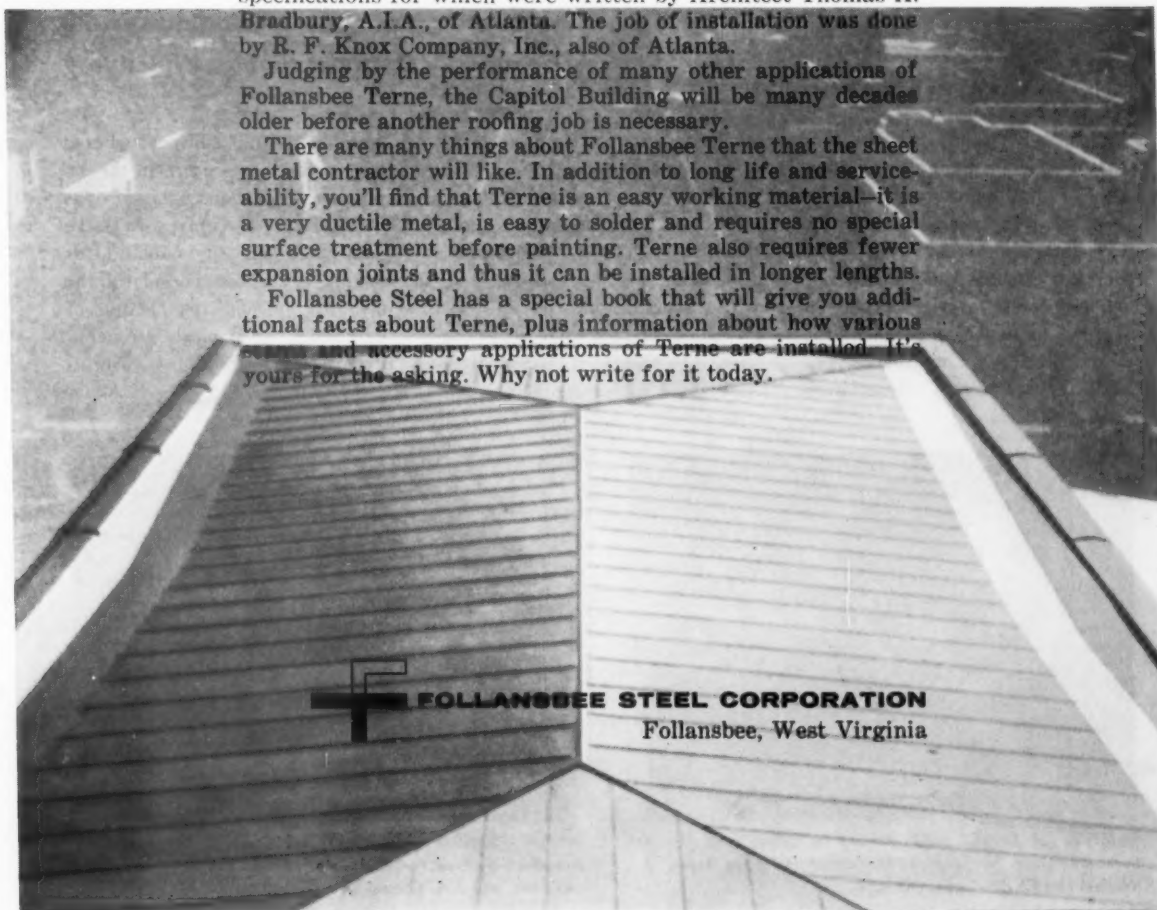
LIFETIME COVER FOR A SOUTHERN LANDMARK..... a roof of follansbee terne

One of the famous landmarks of the South—the State Capitol Building in Atlanta, Georgia—recently got a new roof of Follansbee Terne. All planes of the new roof are standing seam, specifications for which were written by Architect Thomas A. Bradbury, A.I.A., of Atlanta. The job of installation was done by R. F. Knox Company, Inc., also of Atlanta.

Judging by the performance of many other applications of Follansbee Terne, the Capitol Building will be many decades older before another roofing job is necessary.

There are many things about Follansbee Terne that the sheet metal contractor will like. In addition to long life and serviceability, you'll find that Terne is an easy working material—it is a very ductile metal, is easy to solder and requires no special surface treatment before painting. Terne also requires fewer expansion joints and thus it can be installed in longer lengths.

Follansbee Steel has a special book that will give you additional facts about Terne, plus information about how various seams and accessory applications of Terne are installed. It's yours for the asking. Why not write for it today.



FOLLANSBEE STEEL CORPORATION

Follansbee, West Virginia

WITH THE ASSOCIATIONS

(Continued from page 94)



COMPONENTS of branch duct zone control system are explained by Gerald Powell (right) to Herb Drews, 1960 president. Paul H. Westphal (left) gives an assist

Zone Control — **A Key to Better Profit and Comfort**

**... when prospect is shown how
his heating and air conditioning system
can be made to serve him more effectively**

"DEALER-CONTRACTORS will find that a system providing individual control of temperature in different parts of a house offers opportunities for additional profit," said Gerald Powell, White-Rodgers Co., in his address to delegates attending the annual convention of the Sheet Metal, Air Conditioning and Roofing Contractors' Association

of Illinois in Peoria last month. "This method — and the benefits it offers — can be easily explained to prospective home buyers and to those interested in modernization of existing heating systems."

In discussing sales features, Mr. Powell mentioned that zone control: 1) makes it practical to maintain a higher temperature in

the nursery and bathroom without raising the temperature in the remainder of the house; 2) prevents overheating of rooms with large glass areas exposed to solar loads during the critical periods of the day; 3) prevents overheating of the kitchen when meals are being prepared; 4) prevents overheating

(Continued on page 102)

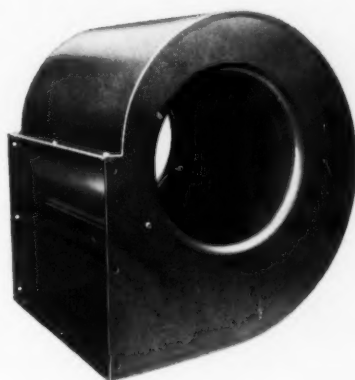
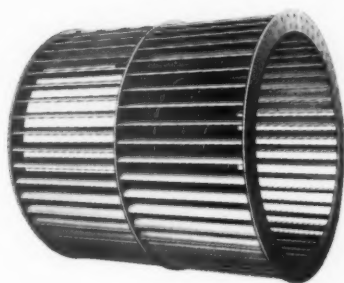


SAMPLES OF DIRECT MAIL PIECES for selling more humidifiers are given by George Boeddener (left) to Harry A. Wurtzel and Charles L. Earlenbaugh



APPLICATIONS FOR INFRARED HEATING equipment are described by Fred Perkins (center) to Lou Reining, convention chairman, and J. S. Kimmel Sr.

CLARAGE



NOW standard equipment
for pressures to **4"**

OVER 20
leading
manufacturers
incorporate this
Clarage equipment

... and that's not all! Clarage Type DF fan equipment is available for pressures to 8" with only slight changes from standard construction.

These wheels and housings have what it takes for especially severe conditions. They're built extra-rugged throughout for full rated, trouble-free operation and longer service life. Hot dipped galvanized, spark resistant, and other special constructions can be furnished.

Learn more . . . contact our nearest office or write us direct for complete information.

Dependable equipment for making air your servant

CLARAGE FAN COMPANY

Kalamazoo, Michigan

SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES • IN CANADA: Canada Fans, Ltd., 4285 Richelieu St., Montreal

3M Brand Adhesives and Sealers answer these insulation needs...



SEE WHAT 3M ADHESIVES CAN DO FOR YOU. Contact your 3M Field Engineer. Or, for more information and free literature telling how time-tested 3M Brand Adhesives and Sealers can help to solve virtually all your insulation installation problems, write on your company letterhead to: A. C. & S. Division, 3M, Dept. SBJ-30, 900 Bush Avenue, St. Paul 6, Minnesota.

HIGH HEAT RESISTANCE. Rugged Adhesive EC-1128 holds tight despite temperatures as high as $+300^{\circ}\text{F}$. And it resists moisture so that steam can't loosen the bond! Even when temperatures drop to -20°F , it still holds insulation to the duct. What's more, EC-1128 provides instant grip... yet plenty of open time to let you position the insulation without rushing. With EC-1128 you can also bond lapped foil-to-foil seams to keep insulation dry for top performance.

FLEXIBILITY. Resilient Sealer EC-800 stays rubbery, flexes with duct expansion and contraction. It's ideal for high velocity systems! Sets up firmly at duct joints; won't flow out of seams under pressure. Apply EC-800 with brush, flow gun or putty knife. Once dry, EC-800 forms a tight seal that actually adds structural strength to duct work.



ADHESIVES, COATINGS AND SEALERS DIVISION

MINNESOTA MINING AND MANUFACTURING COMPANY

... WHERE RESEARCH IS THE KEY TO TOMORROW

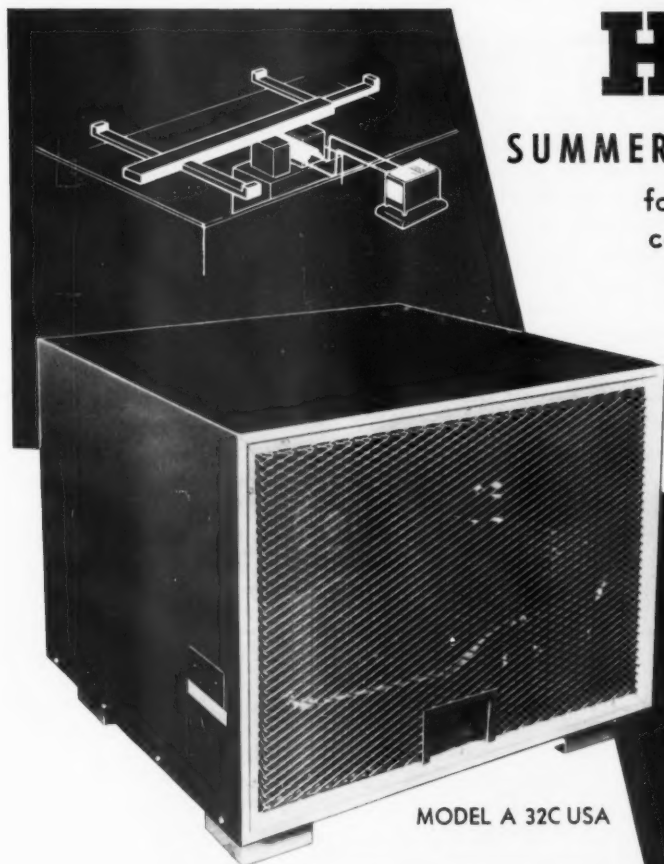


the **INSIDE FACTS on...**

HEIL

SUMMER AIR CONDITIONING

for residential and light
commercial installations



MODEL A 32C USA

- HIGH CAPACITY
- ECONOMY BUY
- EXTREME FLEXIBILITY
- QUIET OPERATION
- COOL COMFORT

HEIL REMOTE CONDENSING UNITS

With Matching Evaporators

All HEIL remote air conditioning units are engineered for efficient cooling and quiet operation. These units are easily installed in minimum time with minimum labor costs. HEIL remote units are air-cooled, eliminating water restrictions and water bills. Economy-wise, HEIL saves you three ways, (1) low original cost, (2) low installation cost, (3) low operating cost. These units are weatherproof and are approved by Underwriters Laboratories for outdoor installation.

**MATCHING EVAPORATORS FOR
HEIL Remote Condensing Units**

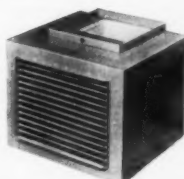
**HEIL DEALER
AIR CONDITIONING
TRAINING SCHOOL**

MARCH
APRIL
MAY

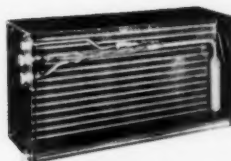
Write your
distributor or
HEIL-QUAKER
for complete
information



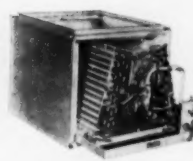
EVAPORATOR BLOWER



UNIVERSAL BLOWER,



HORIZONTAL COIL



"A" COIL

HEIL AUTOMATIC SELF-CONTAINED PACKAGES

These self-contained units are complete, hermetically sealed refrigeration systems with an air-cooled condenser. Because of their compactness and high capacity, they are especially suitable where space is a limiting factor. No water to use . . . no furnace blower is required . . . no lines to run. Units can be adapted to existing warm air heating duct systems or can operate independently.

FOR MORE INFORMATION CALL OR WRITE . . .



HEIL-QUAKER

Corporation

647 THOMPSON LANE

NASHVILLE, TENNESSEE

WITH THE ASSOCIATIONS

(Continued)

New York State Convention (Continued from page 90)

Electrical Contractors' Association, the Mechanical Contractors' Association of America, the Sheet Metal and Air Conditioning Contractors' National Association and representatives of the plumbing industry. This group has held several meetings to explore mutual problems and to develop solutions to be presented to the American Institute of Architects and the American Society of Heating, Refrigerating and Air Conditioning Engineers.

SMACNA Manual Will Help

It is expected that the recommended guide for sheet metal spec-

ifications as published in SMACNA's Manual of Duct Construction (reviewed in February 1960 American Artisan) will be of considerable assistance in achieving the objectives of those who write specifications and will aid the work undertaken by the Council of Mechanical Specialty Contracting Industries.

Other subjects covered at the convention dealt with warm air heating, summer air conditioning, wholesaler help to the dealer-contractor, roofing, architectural sheet metal, and accident prevention. Officers elected are: president, William R. Nolder, Buffalo; first vice

president, George Ballard Jr., Rochester; second vice president, Peter Sturr, Utica; treasurer, Percy Sullivan, Binghamton; executive secretary, Clarence J. Meyer.

Directors for the term ending 1961 are Asaph B. Hall, Elmira; Solon Sprinchorn, Jamestown; and Nicholas Venditti, Schenectady. Directors whose terms will end in 1962 are Donald O. Argy, Niagara Falls; Grant Sullivan, Binghamton; and Frank J. Schneider, Buffalo. Serving until 1963 are Charles Bari, Lockport; William Schmitt Jr., Rochester; and J. Arthur Heaphy, Syracuse.

Indiana Convention (Continued from page 94)

Mishawaka, second vice president; H. W. Meggs, New Castle, secretary; and J. R. Walker, South Bend, treasurer.

Directors who will serve two years are: J. W. Ridgway, Frankfort; Don McCloskey, Indianapolis; Robert Jacobi, Indianapolis; and R. D. Boussum, Fort

Wayne. Directors with one year to serve are: Tom Daily, Hammond; Wm. E. Garber Jr., Indianapolis; Z. V. Hazelton, Muncie; and Fritz Zurstadt, Evansville.

Additional convention programs covered summer air conditioning and business management.

Illinois Convention (Continued from page 98)

ing in living and recreation areas when fireplaces are in use or when larger-than-usual groups are being entertained; and 5) raises system efficiency while cutting fuel bills because air that has been heated is properly distributed.

Major difference between a non-zone system and a system using a zone control damper and damper assembly is that the latter system has a relief duct between the supply and return air trunk lines. This is a bypass duct which con-

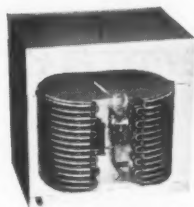
tains a barometric control that permits air to bleed from the supply duct into the return air duct when the air pressure increases due to a number of zones being closed at one time.

Dealer-contractors, by selling greater comfort to prospects, are able to enjoy better profits for their skill, Mr. Powell concluded.

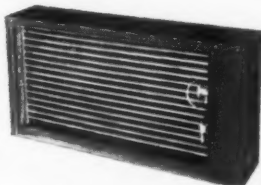
Officers elected for 1960 are: Herbert Drews, Danville, president; James Reuter, Kankakee, vice president; Martin P. Lauer-

man, Galesburg, secretary; and A. H. Schroeder, Champaign, treasurer. Directors elected to serve three years are: V. R. Rockel, St. Louis; Kenneth Rosebaum, Castleton; and Tom Novak, Chicago. Directors for two years are: John Rubo, Batavia; Carl Berry, Bloomington; Ed. Godlewski, Rockford; and Wm. Schroeder, Champaign. Directors for one year are: E. A. Schmidt, Springfield; G. Sturm, Macomb; Lou Reining, Chicago; and F. Mehrings, Peoria.

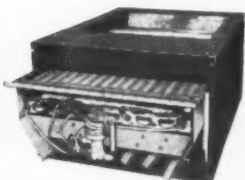
(More association news on page 106)



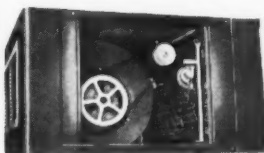
Round, Plenum Evaporator ... more surface in less space ... vertical condensate drainage.



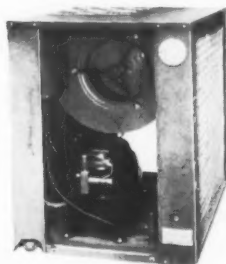
Flat, Duct Evaporator ... heavy gauge enameled cabinet ... built-in drain pan.



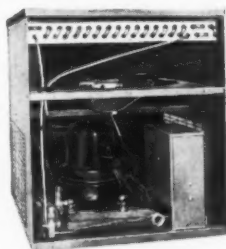
Counterflow Evaporator Coil slides into accessory cabinet ... zinc coated drain trays.



Blower-Evaporator Unit ... compact air handling unit ... accessory plenum-grilles available.



3 or 5 Ton Condensing Unit ... top discharge with centrifugal blower ... unsheltered outdoor installation.



2 or 4 Ton Condensing Unit Top-mounted condenser coil ... operating noise reduced to minimum.

This Premium Cooling Costs LESS

... and it's Rugged, Heavy ... Flexible

Now, designed and constructed in the enviable tradition of 65 years of better Furnaces and Air Conditioners, MONCRIEF COOLING for 1960 is yours to sell at prices that prove: COOLING DOES NOT COST TOO MUCH WHEN IT IS MONCRIEF.

Yet, despite the price advantage you enjoy with Moncrief, you can offer qualities that out-strip your higher priced competition.

For example, the complete line of 2, 3, 4 and 5 Ton Moncrief Air Cooled Condensing Units has cabinets of 16 Gauge Zinc Coated Steel that withstand nature's worst weather for many extra years.

In the new 2 and 4 Ton sizes, these advanced units provide a new principle of operation with a bonus-sized, top-mounted Condenser Coil through which condenser air is discharged at low velocity, impelled by a powerful propeller fan that is housed completely inside the cabinet. The resulting performance is quiet beyond previous standards.

Combined with the companion Moncrief circular, Plenum-Type Evaporator Coil, versatile Duct-Type Coil, Counterflow Coil or Blower-Coil Unit, Moncrief Condensing Units perform with efficiency that provides additional cooling capacity.

Call your MONCRIEF WHOLESALER, now.

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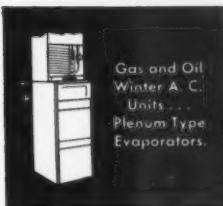
THE HENRY FURNACE

HEATING AND AIR CONDITIONING UNITS

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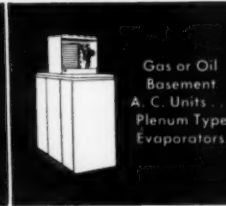
Gas and Oil Winter A. C. Units ... Plenum Type Evaporators.



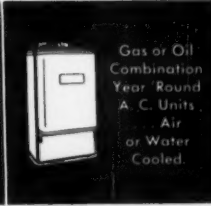
Gas and Oil Counterflow Units ... Counterflow Evaporators.



Gas and Oil Horizontal Furnaces ... Duct Type Evaporators.



Gas or Oil Basement A. C. Units ... Plenum Type Evaporators.

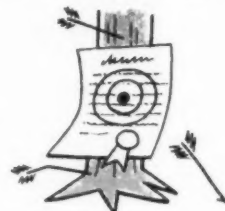


Gas or Oil Combination Year 'Round A. C. Units ... Air or Water Cooled.

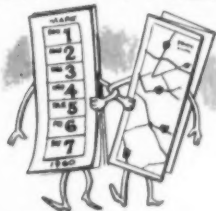
SEEKING more new plumbing
heating...air conditioning contracts?



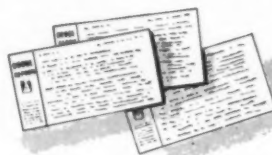
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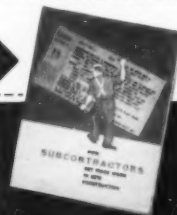
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Send me the book: "How Subcontractors Get More Work in New Construction" and let me see some typical Dodge Reports for my area. I am interested in the general markets checked below.

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Dodge Reports

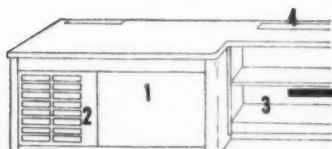
HELP
PLUMBING AND HEATING CONTRACTORS
GET MORE BUSINESS



Gas-fired **Norman Schoolroom Heating and Ventilating Systems** are installed quickly at low cost . . . and there's plenty of latitude for future economy in school expansion! Each Norman forced warm-air system supplies heat rapidly when it is needed . . . blends fresh outdoor air and recirculated room air to cool and ventilate the schoolroom . . . and distributes tempered air evenly along and out from the exposed walls. Expensive boiler rooms, stacks, pipe tunnels, boilers and control panels are eliminated right from the start. As the school grows, additional Norman Systems can be added.

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3. UTIL-I-DUCT® BOOKSHELF 4. AIR DIFFUSER

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WITH THE ASSOCIATIONS

(Continued from page 102)

Ask Members to Report Operating Procedures

PHILADELPHIA — The National Association of Sheet Metal Distributors is asking its members to report products, methods and procedures which they have incorporated into their operations since the association's October convention. Any such developments will be reported at the next convention to enable other members to save on expenses or operate more profitably. Robert W. Mason is chairman of the Product and Information Committee.

New Officers For Detroit

DETROIT — Harold Bowie, Gas Burner Service & Distributing Co., was recently elected president of the Detroit Heating & Air Conditioning Association. New vice president is Ralph D. Gartrell, Gartrell Heating & Cooling. S. C. Patterson, Patterson Heating Co. was elected secretary, and William O. Smith, Aston Products Inc., was elected treasurer.

Absorption Systems Discussed by LA Engineer Group

LOS ANGELES — Speaker of the evening at the January meeting of the Gas Appliance Engineers Society was James Bivins, Southern California Gas Co. Mr. Bivins, assisted by Ray Ross, discussed the subject of gas fired absorption systems. Richard Albert, Utility Appliance Corp., is president of the association.

Somers New President Of Minneapolis Group

MINNEAPOLIS — John Somers, Central Roofing Co., was elected president of the Air Conditioning & Heating-Roofing & Sheet Metal Association at the group's recent annual meeting. Other new officers elected are Fred Vogt, Fred Vogt & Co., vice president; Bob Graving, Sheridan Sheet Metal, secretary; and Ray Kraus, General Sheet Metal Corp., treasurer. All section chairmen selected by individual sections were named members of the board of directors. They are Lowell Anderson, Cronstroms; Jay Quade, Commercial Air Conditioning; Richard Sievert, W. A. Sievert Co.; and Howard Holmberg, Nokomis Sheet Metal Corp.

Ken Day, Minneapolis Sheet Metal Corp., and Paul Tente, W. J. Kruckeberg Roofing & Sheet Metal Inc., were given awards in recognition of their services during 1959.

Ferrara Elected St. Paul President

ST. PAUL — New president of the Roofing, Sheet Metal and Air Conditioning Contractors' Association is James Ferrara, Standard Heating Co. Other new officers are vice president, James Walsh, Thomas Finn Co.; secretary, Roger Meyer, Daytons Bluff Sheet Metal, Inc.; and treasurer, Herman Hertzner, Ettel & Franz Co. Directors are Roy H. Dose, Roofings, Inc.; Ervin Belisle, Sheet Metal Specialty Co.; Joseph Murray, Preferred Sheet Metal; C. P. Neil, Neil & Hubbard Heating & Air Conditioning Co.; George Hansen, Hansen Roofing & Sheet Metal; and Leroy Peters, Ace Heating Co., Inc.

Commercial Work Discussed at Boston

BOSTON — At the request of its members, the Sheet Metal & Air Conditioning Contractors' Association recently held a meeting devoted to the subject of commercial heating. Guest speaker was Charles Hasman, a Cleveland consulting engineer, who described new developments taking place in the field of commercial heating, offered suggestions on how to locate and develop prospects, and discussed the size of the market.

Canadian Association To Conduct AC School

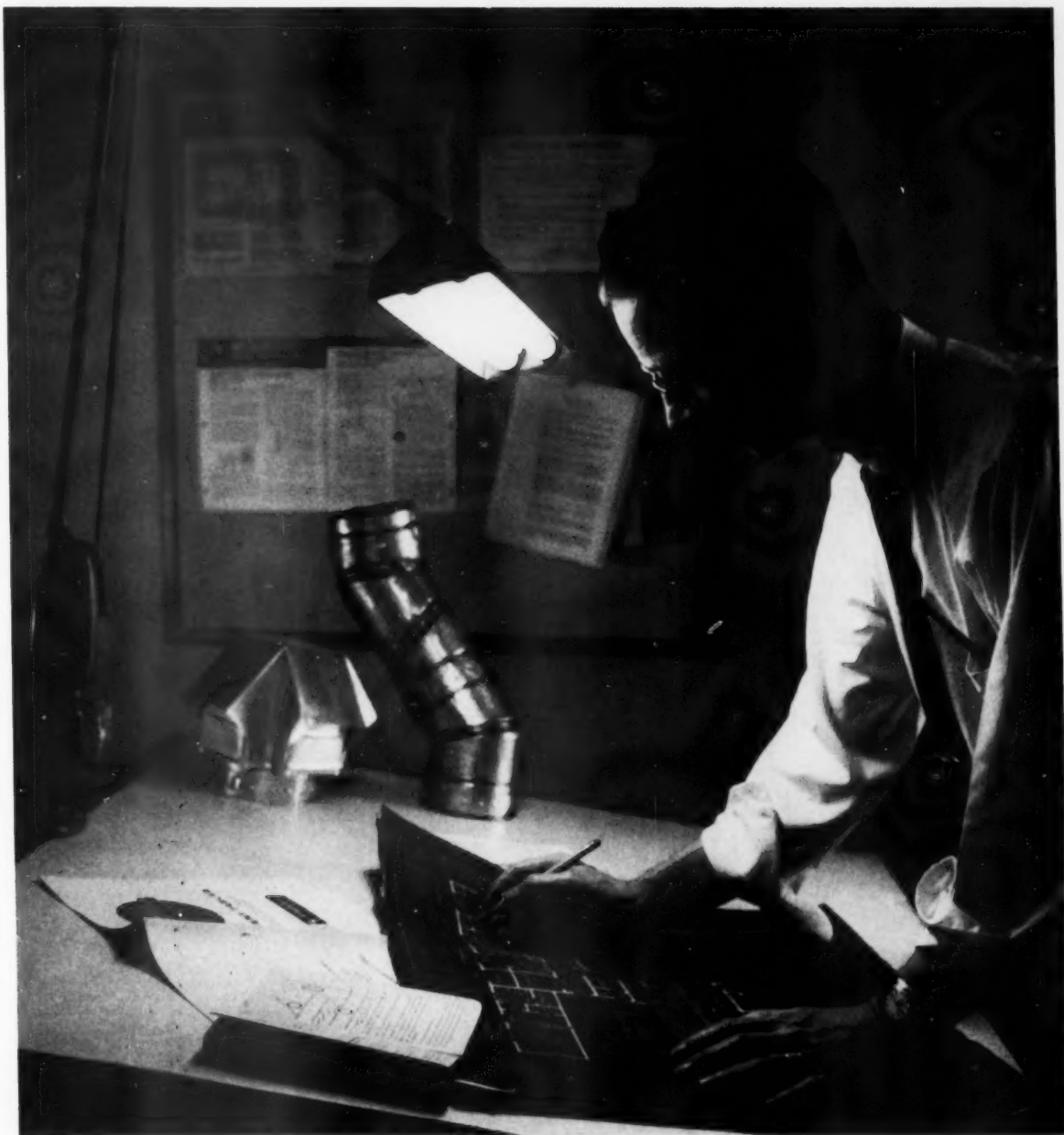
TORONTO — The National Warm Air Heating and Air Conditioning Association of Canada will present a residential and commercial summer air conditioning school in Toronto next month. The association's technical advisory committee is now working on the syllabus for this school, which is expected to run for a five-day period.

The association is currently conducting four-day heating schools in various cities throughout Canada. Night classes are also being held as part of the group's educational program for members.

Aluminum Group Holds Election

NEW YORK CITY — The Aluminum Association recently re-elected M. M. Anderson to serve as its president. Also re-elected was S. D. Den Uyl, chairman of the board of directors. Lewis P. Favorite was elected director-at-large for a three year term. George A. Ginsburg and David P. Reynolds were re-elected to three year terms as directors-at-large.

(Coming Events on page 110)



You can tell a Metalbestos Man
By the service tips he gets!

When you install Metalbestos gas vent pipe, you are backed by the most complete and useful technical and service information available. Safety System Gas Vent Tables help you plan vent runs correctly. The Vent Installation Handbook gives you important on-the-job facts. Gas Vent Service Bulletins regularly provide tips on how to do it better. And there's a lot more. It pays to do business with Metalbestos. Ask any Metalbestos man.

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See your local Metalbestos representative or write Dept. B-1.



METALBESTOS
 DIVISION
 William Wallace Company,
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 Manufacturing Plants in Belmont,
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REMEMBER...

... the bite of the ice pick splitting a block of ice ... the clank of tongs ... the heave of the ice cake to the iceman's soaking shoulder apron? Remember his dripping trail up the walk, across the porch and kitchen to the icebox? What an appetite it had for cakes of ice ... remember? And "mop up those tracks ... don't forget to empty the drip pan!"

While the iceman made his rounds years ago, scientists worked to perfect a safe refrigerant. In 1931 development of "Freon" refrigerant opened the door to progress that has put safe, efficient, carefree refrigeration into nearly every home in the country. Today, "Freon" stands first for quality and leadership in serving the refrigeration and air conditioning industries.

Just as "Freon" is the refrigerant you know and trust, you can be sure Du Pont will continue research and development of its products and packaging. Always look for new developments from Du Pont. E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division, Wilmington 98, Delaware.

*Freon and combinations of Freon- or F- followed by numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.



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and factory-sealed
for purity*

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premium quality
refrigerants

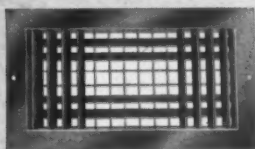


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... THROUGH CHEMISTRY

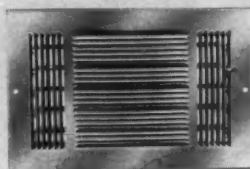
*You can predict performance
if they are...*

**Air
Mate**

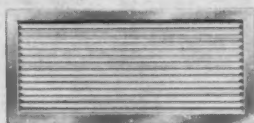
**REGISTERS, GRILLES
DIFFUSERS**



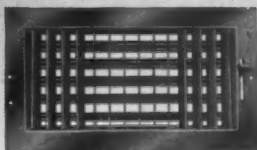
**ADJUSTABLE
DEFLECTION GRILLES**



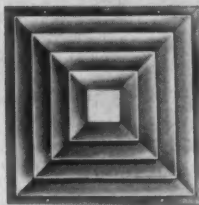
**SIDEWALL OR
CEILING DIFFUSERS**



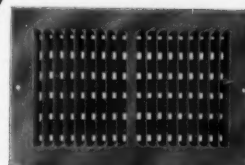
**RETURN
AIR GRILLES**



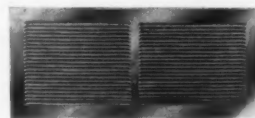
**ADJUSTABLE
DEFLECTION REGISTERS**



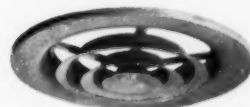
**SQUARE
DIFFUSERS**



**MULTI-SHUTTER
WALL REGISTERS**



**RETURN
AIR GRILLES
FLEXIBLE FIN TYPE**



**ROUND
DIFFUSERS**

When performance really counts, "Air Mate" engineered products, backed by engineering data, provide you the efficient answers to your heating and air conditioning problems. A complete line of Registers, Grilles and Diffusers is available for every requirement.

✱ Write for free illustrated catalog with complete engineering section that is invaluable to help you to properly select, locate, and size return grilles and outlets for your installations.

DRY MANUFACTURING CO.
INCORPORATED

P. O. BOX 797 • WINTERS, TEXAS

WITH THE ASSOCIATIONS

(Continued from page 106)

Coming Events

March

Mar. 21-24 — 2nd Annual Industrial Ventilation Conference, North Carolina State College, Raleigh, N. C. David B. Stansel, assistant director, Division of College Extension, North Carolina State College, P. O. Box 5125, Raleigh, N. C.

Mar. 30-Apr. 1 — Gas Appliance Manufacturers' Association, annual convention, Greenbrier Hotel, White Sulphur Springs, W. Va. Gas Appliance Manufacturers' Association, 60 E. 42nd St., New York 17.

April

Apr. 4-7 — Oil Heat Institute of America, annual convention and exposition, Park Sheraton Hotel and the Coliseum, New York City. R. H. L. Becker managing director, 500-5th Ave., New York 36.

Apr. 21-22 — National Association of Sheet Metal Distributors, spring meeting, Deshler-Hilton Hotel, Columbus, O. Thomas A. Fernley Jr., executive secretary, 1900 Arch St., Philadelphia 3.

Apr. 27-30 — Western Air Conditioning, Heating, Ventilating and Refrigeration Exhibit and Conference, Shrine Exposition Hall, Los Angeles. Fred J. Tabery, exhibit manager, 3443 S. Hill St., Los Angeles.

Apr. 28-30 — Roofing and Sheet Metal Contractors' Association of Florida, annual convention, Cherry Plaza Hotel, Orlando, Fla. Eldon G. Goldman, P. O. Box 543, Winter Park, Fla.

May

May 2-3 — Northamerican Heating & Air-conditioning Wholesalers, spring convention, Hotel Roosevelt, New Orleans. Wilbur R. Bull, managing director, 1200 W. Fifth Ave., Columbus, O.

May 26-28 — Sheet Metal and Air Conditioning Contractors' National Association, Inc., annual convention, Hotel Statler, Boston. J. D. Wilder, executive secretary, 107 Center St., Elgin, Ill.

June

June 2-5 — Sheet Metal, Roofing, Heating, Air Conditioning Contractors' Association of Georgia, annual convention, Jekyll Club Hotel, Jekyll Island, Ga. B. L. Noblitt, executive secretary, 208 Red Rock Bldg., Atlanta 3.

June 13-15 — American Society of Heating, Refrigerating and Air-Conditioning Engineers, 67th annual meeting, Vancouver, B. C. R. C. Cross, executive secretary, 234 Fifth Ave., New York.

June 16-18 — Sheet Metal, Air Conditioning and Roofing Contractors' Association of Pennsylvania, annual convention, Lawrence Hotel, Erie, Pa. Earl W. Liebermann, secretary, 1411 Merchant St., Ambridge, Pa.

June 30-July 2 — Carolinas Roofing and Sheet Metal Contractors' Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C. H. J. Stockard Jr., executive secretary, P. O. Box 408, Raleigh, N. C.

October

Oct. 12-14 — American Gas Association, annual convention, Atlantic City, N. J. C. S. Stackpole, Managing Director, 420 Lexington Ave., New York 17.

November

Nov. 18-22 — Air-Conditioning and Refrigeration Institute, annual meeting, Hollywood Beach Hotel, Hollywood Beach, Fla. Geo. S. Jones Jr., managing director, 1346 Connecticut Ave., Washington 6, D. C.

Bostitch metal stitcher increases production 150%

Switching to Bostitch meant just one fastening method instead of three for this manufacturer of quail feeders. A high-speed Bostitch metal stitcher increased production at least 150%. Similar speed and savings could apply to any number of things

made from 24-gauge sheet metal. To find ways Bostitch can help you speed production, improve products and cut costs, mail the coupon below. Or call your Bostitch Economy Man, who is listed under "Bostitch" in your telephone directory.



◀ Section of unit is formed into cone shape and is fastened at seam with 16 to 18 metal stitches. Operator completes top by applying eight stitches at joint overlap.



▲ Bottom view of assembled feeder shows galvanized food pail attached to feeder top by means of sheet metal hinge stitched to feeder top with six to eight stitches. Two stitches fasten hinge to pail. One stitch fastens a locking chain to top.



◀ One Bostitch metal stitcher replaced three fastening methods, increased production and cut costs.

Fasten it better and faster with



MAIL TODAY

Bostitch, 943 Briggs Drive, East Greenwich, R. I.

☐ Please have an Economy Man call
☐ Please send free literature on fastening sheet metal
 We now use (please check)

☐ Riveting ☐ Bolting ☐ Spot Welding ☐ Crimping

Name

Company

Address

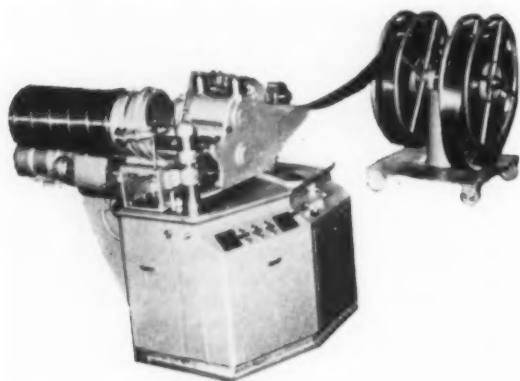
City Zone State

EQUIPMENT DEVELOPMENTS

The latest information on manufacturers' developments is presented here with brief summaries of the applications of these products. For additional product information which is available see this month's New Literature department

Spiral Duct Machine

"SPIRO 403" metal duct fabricating machine designed to be compatible with, and in the same price range as other tools found in large sheet metal shops—*Spiro U.S.A., Inc., 20 N. Wacker Dr., Chicago 6, Ill.* Produces seamed galvanized round duct of 26 ga up to 8 in. in diameter; from 9 through 22 in. diameter in 24 gage; and from 24 through 32 in. diameter in 22 gage. Three sets of roller units are used. Coils of metal, galvanized, aluminum or copper are fed to the roller

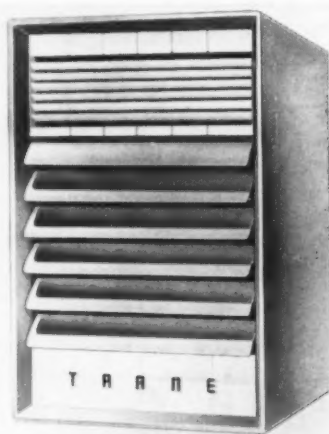


unit where the seam is formed and interlocked into the spiral duct at a forming head. An electro-hydraulically operated self-adjusting automatic cutter is used to cut the tube to any desired length without interrupting production of the round seamed duct. Ducts are usable for both low and high velocity air distribution systems, seams having been tested and used for duct systems where specifications call for 10 in. WG static pressure.

Direct-Fired Heaters

THREE TYPES of compact heaters are available in a wide range of sizes—*The Trane Company, La Crosse, Wis.* New line includes propeller and blower unit heaters and duct heaters. Propeller and blower heating units come in ten sizes from 30,000 to 250,000 Btuh input capacities. Duct heaters are available in six sizes from 60,000 to 250,000 Btuh input capacities. Blower and propeller units are equipped with two sensitive limit controls. One delays operation of the fan until heat exchanger reaches correct temperature to avoid

cold air delivery on start-up. The other turns the fan off only after heat has been removed from the heat exchanger. New line features all-welded, aluminized



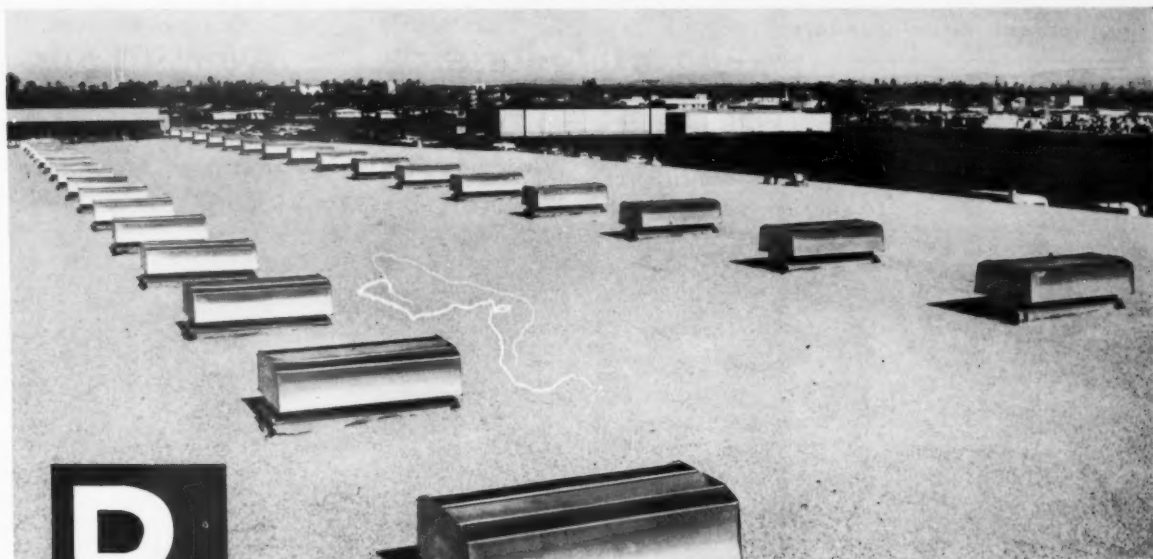
steel heat exchangers which are removable for cleaning. Individual burners can be removed through hinged bottom access door.

Gas-Fired Water Heater

"30-PLUS" gas fired water heater performs as a 30, 40 or 50 gallon, depending on how the dial is set—*Rheem*



Mfg. Co., Chicago. Control of hot water production can either be done manually or with an optional remote control that can be mounted on a wall. These gas-fired models are available with a Rheemglas tank or a Coppermatic tank.



FOR REXALL: VENTILATION by COLT

Rexall Drug & Chemical Co. wanted maximum air movement at minimum cost in their new Santa Ana, California, plant. The specifying engineer selected Colt. You, too, can give your client more CFM of air movement without motors or operating costs with a Colt Installation. Get the Colt story today!



COLT VENTILATION OF AMERICA, INC.

4652 Hollywood Blvd., Los Angeles 27, California • NOrmandy 2-1181

Write for name of Distributor nearest you.

Huge battery of Colt SRC/3080 natural gravity ventilators, part of a recent installation for Rexall Drug & Chemical Co. in California

*Engineers and General Contractors:
W.M. J. MORAN CO., Alhambra, California,
for the new Rexall plant. Air conditioning
and ventilating contractors:
BAKER ENGINEERING CO., Los Angeles*

Lightweight construction of Colt ventilators means easier handling and installation, no strain on the roof diaphragm. Standard base fits skylight pane or rectangular hole on any type roof. The Colt SRC/3080 Ventilator (shown here) gives an unrestricted free area of 14 sq. ft., weighs only 145 lbs. and is just 27" high.



- (1) Low Silhouette
- (2) Easy to handle and install
- (3) Rugged Construction
- (4) Long-Life Anti-Corrosive Hardened Aluminum
- (5) Dependable, Powerful, High Exhaust Capacity

Colt Ventilation of America, Inc.
4652 Hollywood Blvd., Los Angeles 27, California

Please: ☐ Send Free Technical Brochure
☐ Send Free Brochure "Some Aspects of Fire Prevention in Industrial Buildings" by M. J. Reaney

NAME, TITLE _____

COMPANY _____

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CITY _____ ZONE _____ STATE _____

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equipment developments

(Continued)

Adhesive Applicator

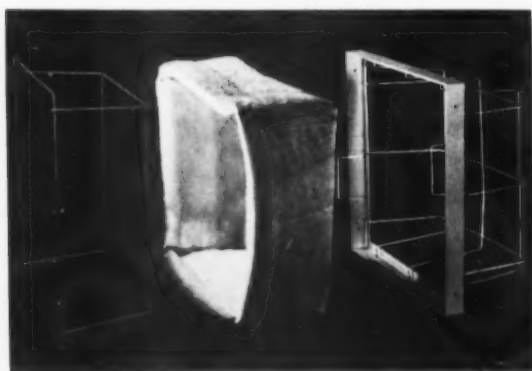
MODEL B adhesive applicator speeds spreading of quick drying adhesives in hard-to-reach places—*Bostik Dept.*,



B.B. Chemical Co., Cambridge, Mass. Advantages claimed by the manufacturer are the elimination of adhesive evaporation and waste, reduction of the hazards of open containers, and retention of adhesives viscosity because of the sealed feature of the two gallon feed tank. Applicator has finger-tip control valve on brush barrel. A full line of interchangeable brush tips are available.

High Velocity System

"ULOK" CUBE AIR FILTER offers low pressure drop service in a high velocity system—*Union Carbide Development Co., Div. of Union Carbide Corp., N.Y.* The

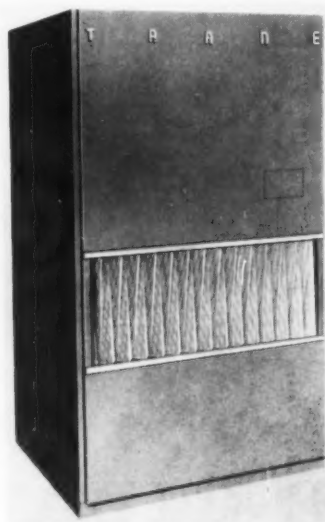


ULOK is shaped like an open box and is made up of three components: the disposable high loft, 2 in. thick, Dynel filter medium; a "basket," or retainer, into which the medium fits; and a rust proof retainer wire that fits inside the medium to hold it rigid. Unit is rated at 0.04 in. pressure at 2000 cfm. Units are available with standard face areas measuring 20 × 20,

20 × 25, 16 × 20, or 16 × 25 in. For each of these, there are units that measure 8, 11, and 20 in. in the direction parallel to the air stream.

Water-to-Air Heat Pump

WATER-TO-AIR heat pump has heating capacities that range from 49,000 to 206,000 Btuh—*The Trane Co.*,



La Crosse, Wis. Available in five sizes with ratings from 3, 5, and 7½ ton single compressor units to 10 and 15 ton dual compressor units. Units can be installed free-standing, recessed or at remote locations. The heat pump can be used for free air delivery with optional plenums or with duct work. Remote, wall mounted thermostat is standard on 10 and 15 ton models and optional on smaller units.

Prefabricated Sound Control Curb

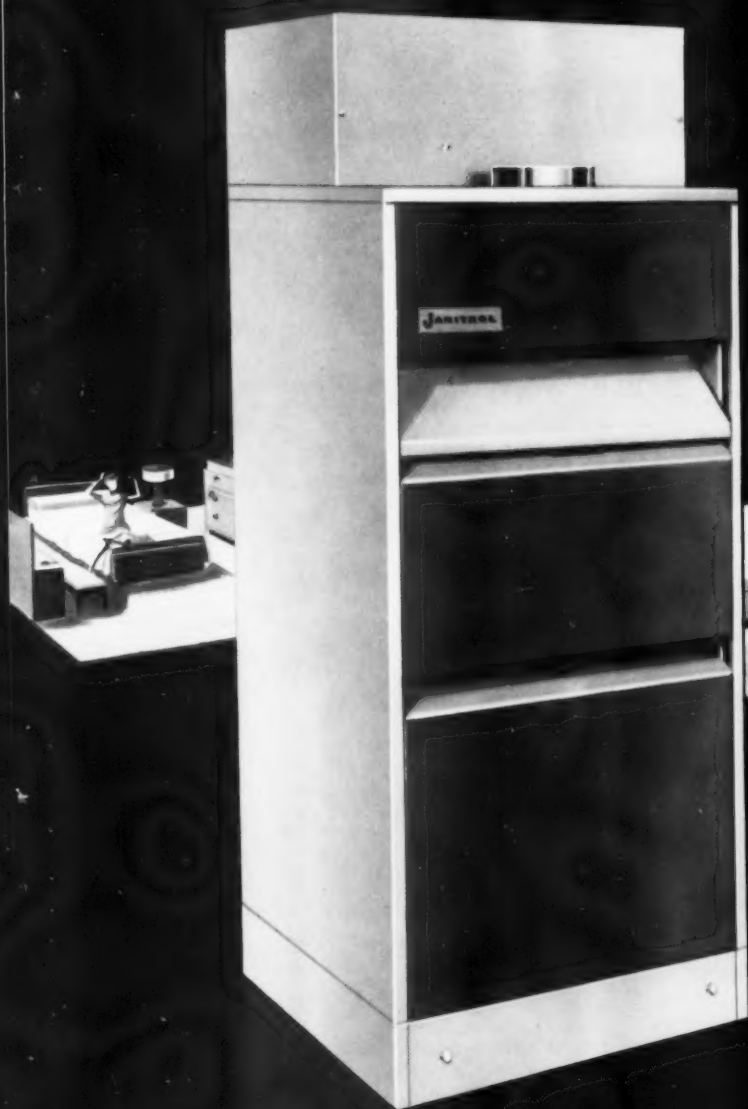
QT SOUND CONTROL has the same effect as if the fan had been reduced 43 percent—*Jenn-Air Products Co., Inc., Indianapolis.* The thermo-insulated attenuator is a prefabricated, self-flashing curb only 6 to 12 in.



the quality tells . . . the quality sells

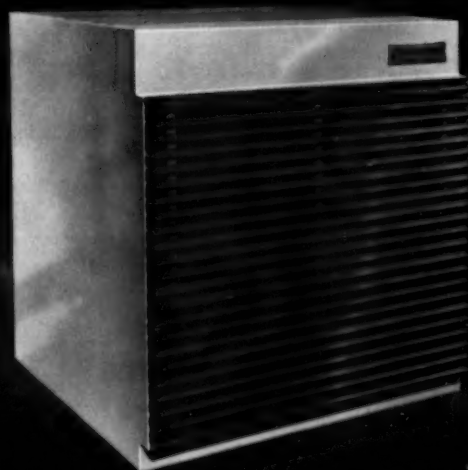
new **JANITROL**
WIN-SUM-MATIC

**year 'round
air conditioner**



COMPACT...

Fits in as little as $3\frac{3}{4}$ square feet!
Features Dura-Tube Gas Heating Heart
and powerful air-cooled cooling.



WIRE US COLLECT FOR PROOF

WESTERN UNION

HARRY C. GURNEY, General Sales Manager,
Janitrol Heating and Air Conditioning,
A Division of Midland-Ross Corporation,
Columbus 16, Ohio

RUSH ME FACTS ON JANITROL'S
SELECT DEALER PROGRAM.

Name

Address

State

City

THE PROFIT PARADE IN THE 60'S WILL BE LED BY JANITROL SELECT DEALERS!

Paced by the exclusive *Janitrol Select Dealer Plan* that gives you action in place of promises... adds vital new depth and dimension to your *Growth and Profit Future!*

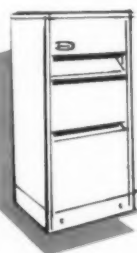
check-out the highlights!

- 1 **The Finest Factory Technical Training Program** in the industry... tuition-free for Select Dealers!
- 2 **Personalized Dealer Management Services**... expert guidance in all phases of management, including sales training, recruiting, accounting, advertising, and engineering available to Select Dealers at no cost!
- 3 **Dealer Information Service**... authoritative newsletters, bulletins and periodicals keep Select Dealers up to date on latest developments in equipment, applications, service and merchandising slants!
- 4 **Regular Regional Meetings**... bring Select Dealers and Janitrol personnel together for stimulating discussions of merchandising, management, engineering and other subjects pertinent to dealer growth and profit!
- 5 **Liberal Dealer Stocking Plans**... assure the equipment required by Select Dealers will be on hand when needed.
- 6 **Free Retail Salesman Training and Aids**... Janitrol helps recruit and train salesmen for Select Dealers. Provides proven, sales-clinching presentation manuals for cooling, heating and new home builder selling!
- 7 **Protected Territories**... Select Dealer Franchises in any market area are limited. No "free-wheeling" franchising to choke off profits!
- 8 **Powerful Planned Co-op Advertising**... a year-round program of hard-hitting local level advertising and promotion prepared for you by experts!
- 9 **Powerful National Advertising**... to create demand in your own local market for Janitrol products—back up your sales and promotion activities!
- 10 **Promotion Package Worth \$300.00**... for newly franchised Select Dealers. Includes illuminated signs, floor and window displays, colorful literature, demonstration kits, etc.
- 11 **Yellow Page Telephone Listings**... reserved for you, as a Select Dealer, in your own local phone book under the JANITROL headings.

12 **Competitive Pricing**... made possible by famous Janitrol advanced engineering and new automated production lines. Puts Select Dealers in the driver's seat with quality at low cost!

13 **The Top Brand Name**... Janitrol leadership in design and quality is nationally recognized and acclaimed. Over two million Janitrol units have been sold!

14 **A Great Line... A Complete Line** featuring the Win-Sum-Matic, finest of a fine line!



The Janitrol Win-Sum-Matic Year 'Round conditioner brings you years-ahead features and performance... plus the industry's greatest selection of quality accessories for custom-designed comfort systems to boost your profits! Built for time-saving installation and backed by a 20-year warranty on the heat exchanger. Operates year 'round with the quiet thriftiness of clean gas heat and powerful air cooling. New slim-trim styling; warm two-tone colors; and exclusive design features packed with sales appeal!

The all-new Series 52 condensing unit is featured as the cooling system for the Win-Sum-Matic. Attractively styled, weatherproof and safe. Top-mounted, upflow fan boosts performance... operates with outside temperature to 125°F.

Other quality products in Janitrol's full line include Oil and Gas-Fired furnaces in horizontal, vertical and counter-flow models... plus a special line of competitive equipment built for the high volume, new home market! In cooling, Janitrol covers the residential and commercial markets with economical, self-contained units; add-on, modernization units and a completely new series of air-cooled condensing units. Janitrol Unit heaters, duct furnaces and schoolroom conditioners blanket the industrial heating market with a wide selection of models from 30,000 up to 1,750,000 Btu inputs.

You owe it to yourself to get the full story on Janitrol's full line... plus the fabulous Janitrol SELECT DEALER PLAN! WIRE COLLECT RIGHT AWAY!

FOR SOARING PROFITS IN THE SIXTIES, JOIN THE JANITROL SELECT DEALER GROUP! WIRE COLLECT FOR COMPLETE INFORMATION, ABSOLUTELY WITHOUT OBLIGATION...

JANITROL

HEATING AND AIR CONDITIONING

A Division of Midland-Ross Corporation

Columbus 16, Ohio • In Canada: Moffats Ltd., Toronto 15

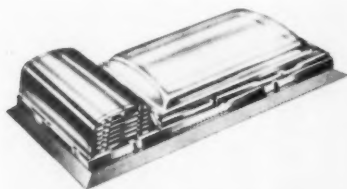
equipment developments

(Continued)

in overall height. The QT sound control curb cuts air flow capacity by 10 per cent, according to the manufacturer. A unit rated at 1640 cfm, for example, will deliver 1476 cfm when mounted on the QT curb. It can be installed as a conventional curb, mounted directly at the roof line, or installed into the roof when lower contour is desired. Four sizes are available with or without cant strip.

Skylight-Ventilator Combinations

ASTRO-LITES and ASTRO-VENTS are suitable for heavy-duty commercial, institutional and industrial require-

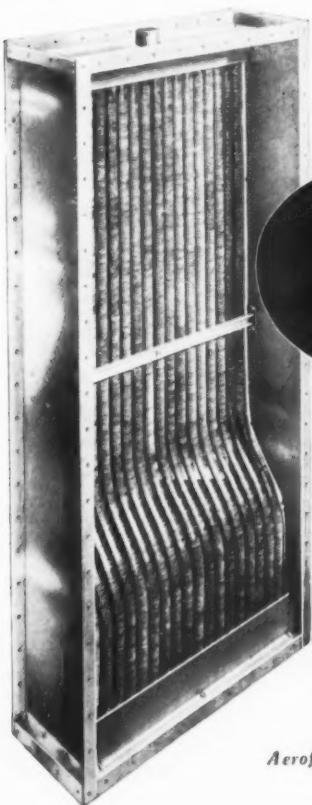
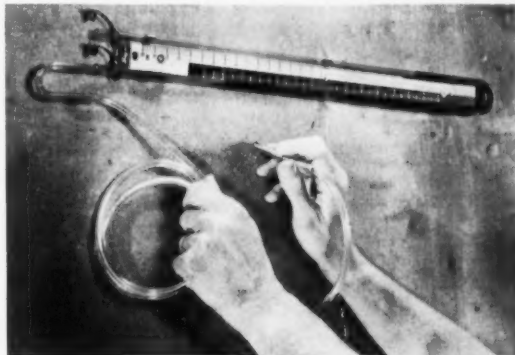


ments—Jenn-Air Products Co., Inc., Indianapolis. The skylights (Astro-Lites) consist of one-piece acrylic resin dome and aluminum frame for installation in self-

flashing, insulated curb. Astro-Lites are offered in square or rectangular shapes and in lengths from 14 to 115 in. Series L units have a single dome; Series D are dual mounted end to end. Combination skylight-ventilators (Astro-Vents) are available in 1350 model variations and meet most lighting and ventilating requirement with air moving capacities ranging from 180 cfm to 4400 cfm. Integral backdraft damper is mounted inside, out of the weather.

Inclined or Vertical Manometer

DUAL RANGE manometer can be used either as a vertical U tube manometer or as an inclined manometer in



Heating? Cooling? Air Conditioning? Process?

Here's How to
Get the **RIGHT** Answer to your
HEAT-EXCHANGE PROBLEMS

The right ratio of surfaces—the right materials—the right velocities—the right proportion between coil area and depth . . . there are dozens of factors that affect the efficiency, maintenance and service life of heat-exchange coils.

For best performance in your own application, the practical approach is to take full advantage of the unequalled engineering, research and design skill—the unequalled manufacturing and testing facilities—which AeroFin offers you.

To get the *right* answer—ask the AeroFin man.

AEROFIN CORPORATION

101 Greenway Ave., Syracuse 3, N. Y.

AeroFin is sold only by manufacturers of nationally advertised fan system apparatus. List on request.

equipment developments

(Continued)

measuring low pressures—*F. W. Dwyer Mfg. Co., Michigan City, Ind.* A special scale allows reading high range measurements on the other leg when the gage is inclined. When used as a U tube, pressures or pressure differentials are measured from 0 to 16 in. of water with minor scale divisions of 0.2 in. water. As an inclined gage it reads from 0.20 in. to 0 to 2.60 in. of water with minor scale divisions of 0.02 in.

Central Air Conditioning

"CORSAIRE" units are designed for use where a cooling system independent of the heating system is desired—*Rheem Mfg. Co., Chicago.* Seven remote condensing unit models



are being offered, in four capacity sizes: 23,000, 34,000, 46,000 and 57,000 Btu/h. Self-contained units are available in 22,000 and 33,000 Btu/h capacities. Installations include rooftop, attic, crawl space and through-the-wall use.

Third Dimension Letters

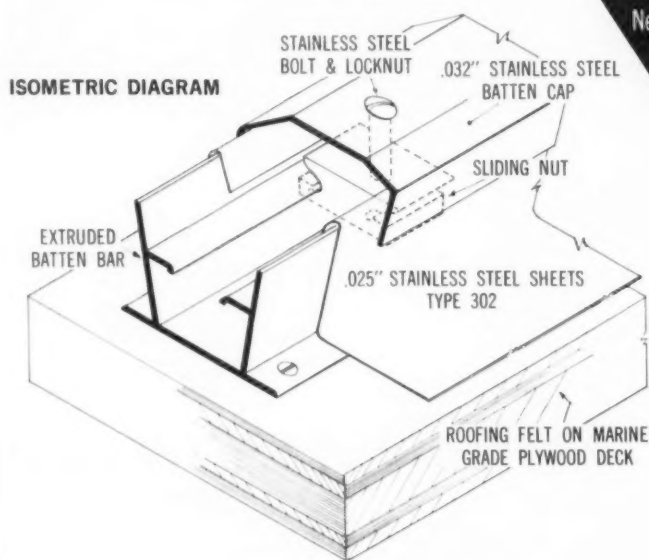
"LETTERS OF DEPTH" are available in cast aluminum alloy and bronze, porcelain enamel steel and stainless steel—*Nelson-Harkins Industries, Chicago.* All letters can be projected, set flush or mounted as free standing, and can be illuminated either directly or indirectly. Aluminum letters are available in a variety of standard sizes ranging from 2 to 30 in. in height and come in many stock designs.

Old Buildings Mean New



These photos show the need for a new roof on the Butler County (Pennsylvania) Courthouse spire, the work in progress, and the attractive appearance of the finished job.

Sheet Metal Contractor: H. H. Tate Roofing & Sheet Metal Co., Pittsburgh, Pennsylvania
Architect: B. J. M. Candless, A.I.A., Ellwood City, Pennsylvania

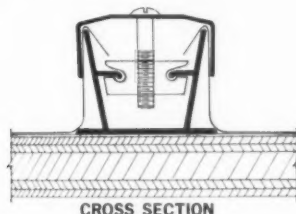


New steels are
born at
Armco

Stainless Steel Business



Drawing shows how easily stainless steel sheets were attached to roof on spire of Butler County (Pennsylvania) Courthouse.



Wherever you're located, chances are some roofs on older monumental buildings in your community need to be replaced. Many of these structures, such as churches, courthouses, city halls, and other municipal buildings, are landmarks that the community wants to preserve. A stainless steel roof will help do just that—and increase your stainless business.

Take the century-old Butler County (Pennsylvania) Courthouse, for example. The slate roof on the spire had deteriorated beyond repair, so county officials decided to replace it with durable, eye-catching stainless steel. The job called for more than six thousand pounds of Armco 18-8 (Type 302) Stainless Steel with No. 2D finish. The majority of sheets were .025 gage, and were ordered 36" wide by 120" long.

Easy to Install

Profitable stainless steel jobs such as this are easy to fabricate and install. Besides, the many advantages of stainless steel make roofing jobs for these types of buildings easy to sell. You can point out that stainless is practically immune to atmospheric corrosion . . . that mill-applied finishes provide a glare-free rich luster . . . that stainless blends well with any type of architecture . . . that it will never become "dated."

For additional facts and sales aids to help you sell stainless steel jobs of any kind, just contact your nearby distributor of Armco Stainless Steels. Furthermore, your Armco Distributor will supply you the steel for the job in the gages and sizes you need, and help you compute costs. If you don't know his name, write Armco Steel Corporation, 1400 Curtis Street, Middletown, Ohio. We'll be glad to help you get in touch with him.

ARMCO STEEL



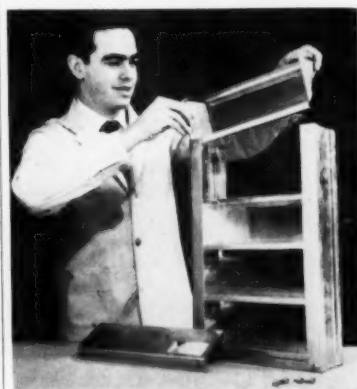
Armco Division • Sheffield Division • The National Supply Company
Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation

equipment developments

(Continued)

Aluminum Louvers

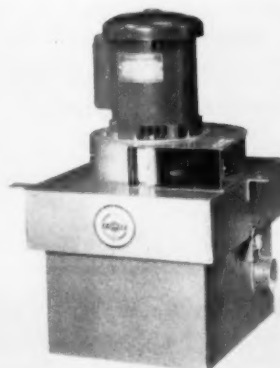
"WALCON" LINE of fixed and adjustable aluminum ventilating louvers feature interchangeable parts and simplicity of assembly—Walcon



Corp., Ecorse, Mich. Louvers are available in standard sizes, ranging from 12 ft heights and 5 ft widths. They are produced from heavy-duty, 0.063 in. aluminum sheet. No welding is needed as only eight screws hold the unit together.

Compact Dust Collector

MODEL 301 dust collector stands 21½ in. high and occupies a space 12 × 14 in.—Torit Mfg. Co., St. Paul. New model can be located on or under work benches and is suited to dust control in electronic and other precision production. It has a fire-

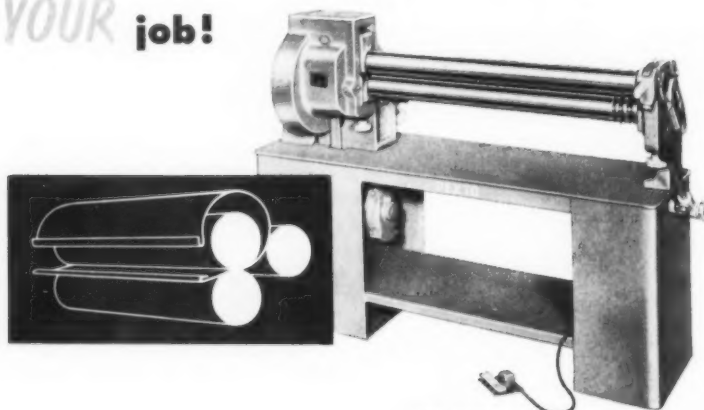


PEXTO

has the best

ROLL FORMING MACHINE for

YOUR job!



No. 3416
3 Inch Rolls

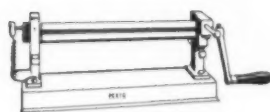
Tested and proven on the job, PEXTO Slip Roll Formers speed production techniques with new ease and accuracy and will give years of outstanding, trouble-free service.

Work rolls of high carbon steel are precision turned, ground to a high finish and accurately fitted to assure easy balanced operation.

Available in sizes for every requirement in both motor driven and hand operated models. PEXTO Roll Formers will handle light gauge sheet metal up to 48 inches. Roll sizes from 1, 1½, 2, 2½ and 3 inch diameters.

The PEXTO complete line of machines and tools for Sheet Metal Fabrication is sold by Distributors throughout the country.

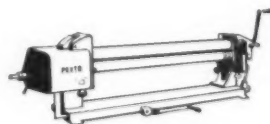
Literature available on request.



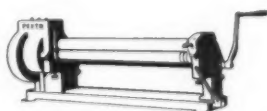
No. 0350
1 Inch and 1½ Inch Rolls



No. 381 2 Inch Rolls



No. 390 2½ Inch Rolls



No. 416 3 Inch Rolls

THE PECK, STOW & WILCOX CO. Southington, Conn. U.S.A.

A complete line of machines and tools for Sheet Metal Fabrication.

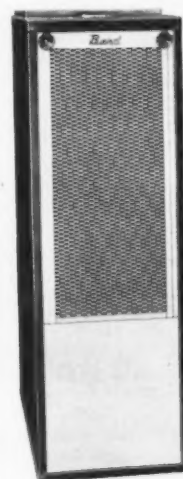
equipment developments

(Continued)

resistant, throwaway glass fiber filter. Performance ratings under standard test conditions are: 200 cfm; velocity, 4100; static pressure, 1.7 in. W.G.; inlet, 3 in. It's equipped with a 1/3 hp motor.

Gas-Fired Furnace

NEW SERIES of highboy and counter-flow gas-fired furnaces feature sectional type heat exchangers and ribbon burners—Bard Mfg. Co., Bryan, O. Units are available in 75,000,



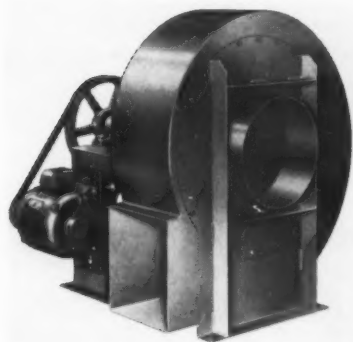
100,000, 125,000, and 150,000 Btuh input. Cabinets are baked green hammetone enamel with white fronts, 57 in. high and as narrow as 14½ in. All units are prewired and ready to install. Models are AGA approved for city and L.P. gases.

Industrial Blowers

CENTRIFUGAL BLOWERS come in three basic wheel designs—The Trane Co., La Crosse, Wis. Air handling wheel designs cope with gases, corrosive fumes, granular or fibrous materials. Wheel sizes from 19⅞ to 64⅜ in. A range of 11 inlet sizes from 11 to 37 in., and five arrangements meet the needs of industrial processes. Sturdy, heavy gage steel housings are arc-welded with vertical and horizontal angle-iron bracing for added strength.

equipment developments

(Continued)



Split housings are available for limited access installations.

Remote Air Conditioners

AIR-COOLED CHAMPION LINE is a "remote" series with an outside heat exhaust section and a variety of inside evaporator sections—York Div.



of Borg-Warner, York, Pa. The line includes six exhaust sections, with capacities ranging from 4.7 to 15.7 tons. The inside coil sections are available in self-standing, ceiling suspended, or direct-to-ductwork units.

Aluminum Strip Ventilator

TRIMVENT strip ventilator for soffit ventilation and trim—Leigh Bldg. Products, Div. of Air Control Products, Inc., Coppersville, Mich. A deep-form design assures maximum strength with no sagging or buckling under varying weather conditions.



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equipment developments
(Continued)

according to the manufacturer. It comes in 8 ft lengths and fits any type of soffits. Ventilating capacity is 35.2 sq in. of free air per 8 ft length. The



louvers are in banks of six, with each bank $23\frac{3}{8} \times 11\frac{1}{2}$ in. The louver opening is $\frac{1}{8}$ in., the same as eight mesh insect screen. It can be installed flush or recessed.

Gas Furnace

GAS FURNACE has a high capacity blower for summer air conditioning application—Rheem Mfg. Co., Chi-

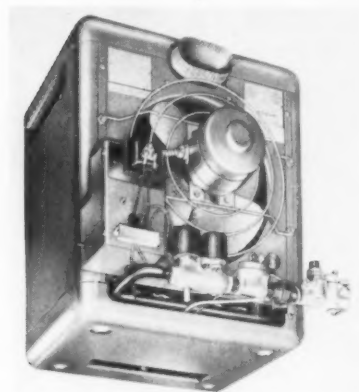


cago. Blower input is 30,000. It delivers from 1400 to 1600 cfm., and is sized for air conditioning systems requiring capacities of $2\frac{1}{2}$ to 4 tons. An automatic damper adjusts the blower operation from summer to winter air delivery.

equipment developments
(Continued)

Automatic Unit Heater

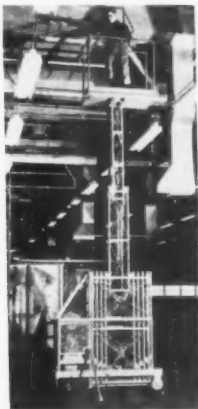
FULLY AUTOMATIC gas-fired unit heater ends hot air blasts—*Carrier*



Corp., Syracuse, N.Y. Two-stage propeller-type, heater fuel system, built for use in small offices and stores. Unit is offered with an output of 30,000 Btuh in the low stage, and 50,000 Btuh in the high stage.

Portable Overhead Lifter

Hi-REACH TELESCOPIC delivers man to the exact work spot—*Economy Engineering Co., Chicago*. Unit is

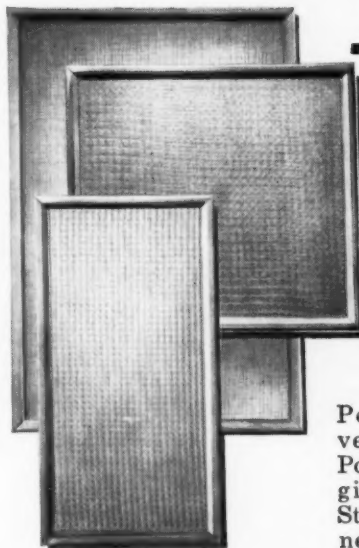


available in manual and automatic electric models and will ascend up to 40 ft. Platform is large enough for the worker, tools and materials. It can be trailer mounted for traveling to various jobs. The lifter lowers to heights of conventional doorways.

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Poly-Mag 80 is a newly developed, highly electrostatic Polyester plastic exclusively engineered and produced for Stoddard Industries. With this new material, DUST-magnet filters are now more effective in every way... higher resistance to shrinkage... lower pressure drop... unaffected by humidity, or temperatures up to 230° F.

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They are guaranteed for the life of the unit in which used... cleaned in minutes with no messy oil coating needed.

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FILTERS**

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Just rinse, shake and replace... that's it.



Trap dust particles as small as 4/10 micron.



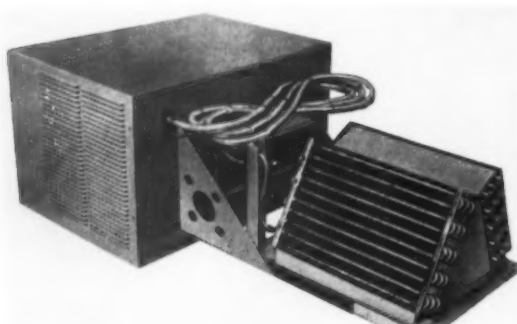
Cleaner, fresher, purer air means less housework.

equipment developments

(Continued)

Factory Charged Remote Conditioner

MODEL CF21 Flex-Hermatic air conditioner features an 18 ft length of armor-covered tubing—*Fedders Corp., Maspeth, N.Y.*



Corp., Maspeth, N.Y. This whole-house air conditioner can be installed either through a wall or in a concrete foundation. The 2 horsepower model is rated at 22,000 Btuh. Other remote models are more standard in design and are available in 2, 3, 4 and 5 horsepower sizes in capacities ranging from 21,000 to 60,000 Btuh.

Packaged Two-Zone Control System

AUTO-ZONE SYSTEM constantly adjusts the flow of conditioned air to each zone—*Rheem Mfg. Co., Chicago.*



Heart of the system is a packaged two-zone damper assembly, featuring multi-blade dampers for each zone, actuated by a damper assembly mounted directly on the damper casing. Thermostats, mounted in the two zones, constantly reposition the floating dampers.

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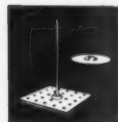


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No faster, surer, safer way to install insulation on the interior and exterior of metal ducts.



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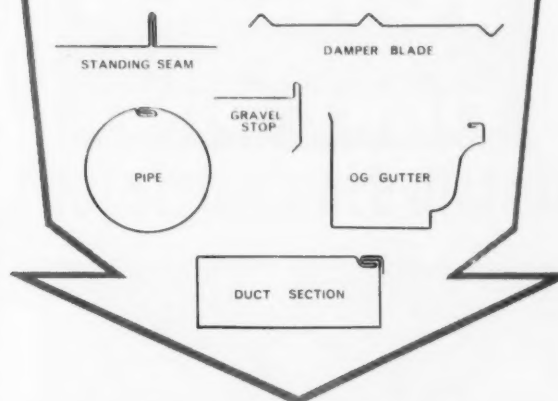


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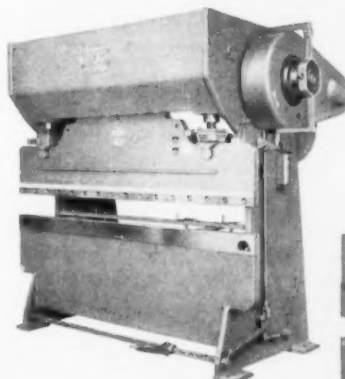
cut production costs
on this kind of work



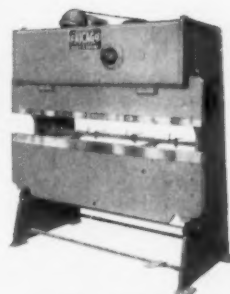
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This housing project, with 131,700 feet of SONOAIRDUCT Fibre Duct, is proof again of the handling ease, low initial cost, and savings on installation that you get with America's best selling fibre duct! For use in slab perimeter heating or combination heating and cooling systems, SONOAIRDUCT Fibre Duct handles easier, levels quicker . . . saves more time, labor, and money than any other duct you can install!

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Air Cooled Condensers

BULLETIN AC-102 presents an analysis of air cooled condensers from the standpoints of specification and application. Four types of units are discussed — those using propeller fans for horizontal air flow, propeller fans for vertical air flow, centrifugal fans for use with ducts, and centrifugal fans for residential air conditioning. Construction features, including "Turbu-Flo" design for finned coils, are described and illustrated. Sections of the catalog cover the operation of air cooled condensers under winter conditions, for indoor use, and on residential and small commercial jobs—*Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22.*

Duct Silencers

BULLETIN No. QM-204-R1 describes "Mod-U-Size" duct silencers that can be built up in parallel or in series to meet varying capacity or acoustic requirements. Low pressure and standard models are available in five sizes. Also being offered is bulletin No. QC-205-R2 covering "Conic-Flow" silencers designed especially for axial flow fans and higher pressure systems—*Industrial Acoustics Co., Inc., 341 Jackson Ave., New York 51.*

Flashing and Gutters

BOOKLET describes flashing, gutters and gravel stops made of chine (an alloy of zinc, copper, chromium, manganese and titanium). According to the company, the metal is tough and strong, solders easily, resists rust and corrosion, forms readily and requires no painting. Booklet is illustrated with detail drawings and installation diagrams. General working instructions and technical data are included—*Cheney Flashing Co., 623 Prospect St., Trenton, N. J.*

Tooling Maintenance

MAINTENANCE OF UNITIZED TOOLING (20 pages) offers suggestions designed to prolong equipment life and promote operating efficiency. Included are sections on punch and die clearance, proper punch length, stripping essentials, standardization of punching shoes, die setting procedures, and inventory control. Manual is illustrated throughout with diagrams to clarify text—*Punch Products Corp., 3800 Highland Ave., Niagara Falls, N. Y.*

Rivets for Sheet Metal Applications

"Pop" RIVETS — what they are, how they work, and advantages they offer — are described in an eight

new literature

(Continued)

page, illustrated brochure. Rivets may be used in both blind and non-blind applications, are made in various sizes and types of aluminum, monel and steel. Selection information is included—*Pop Rivet Div., United Shoe Machinery Corp., Shelton, Conn.*

Mounting Stainless Steel Signs

ADVANTAGES of using stainless steel for architectural signs are described in "Stainless Steel Architectural Quarterly, Vol. 2, Winter." Drawings show typical methods of attaching stainless steel letters to masonry and wood exteriors—*Committee of Stainless Steel Producers, American Iron and Steel Institute, 150 E. 42nd St., New York 17.*

Remote Air Conditioners

"GOLDEN ERA" remote air conditioners are described in form CAC-6029. Booklet is illustrated with photographs of parts, a cutaway view showing a typical installation, and diagrams giving dimensional data. Specifications are given for outdoor compressor sections, coil evaporators and evaporator blower sections—*Fedders Corp., 58-01 Grand Ave., Maspeth 78, N.Y.*

Plastic Ventilating Equipment

BULLETIN B-500 (18 pages) is designed to provide all information needed to design and install corrosion resistant ventilating systems. Data is given on "Rigivyn" (rigid vinyl) and "Rigidon" (reinforced plastic) collecting hoods, ducts and stacks, elbows and other fittings. Included are lists of standard sizes, specifications and chemical resistance data—*Heil Process Equipment Corp., 12901 Elmwood Ave., Cleveland 11.*

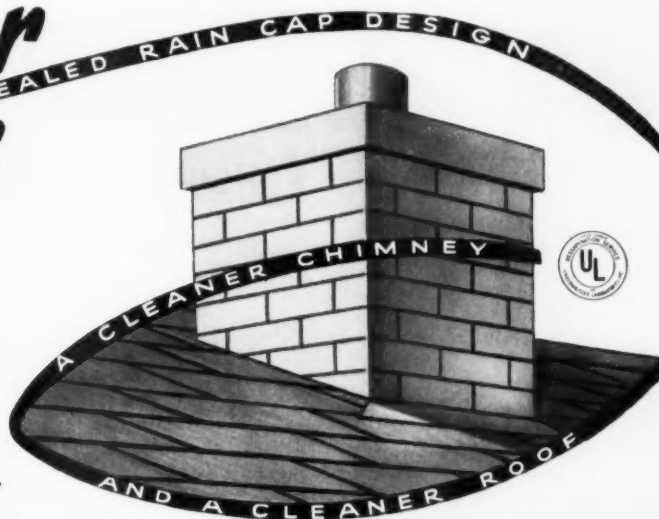
Fastening Methods for Aluminum

"MECHANICAL JOINING OF ALUMINUM" (32 pages, illustrated) answers questions most frequently asked about mechanical fastening methods for aluminum. Booklet covers fastening procedures involving nails and pins, metal stitching, mechanically formed joints, and architectural fasteners. Send request on company letterhead—*Reynolds Metals Co., Dept. PRD-28, Richmond 18, Va.*

Building Insulation

"HOME INSULATIONS" (24 pages) features a section on heating and cooling operating costs and statistics on year 'round climate for 65 cities. Also included are design and application data as well as product

**Vitroliner
Chimneys**
*-freedom from
Streaking*



Vitroliner Chimneys with their concealed rain cap design, eliminate streaking on the housing and roof, by providing for the free flow of combustion gases from the chimney.

These Underwriters' Listed packaged chimneys are distributed and warehoused all over the United States and Canada. They are available in 6", 7", 8", 10" and 12" diameters with red, buff or white brick designed housings, as well as neutral gray.

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Send us information on Vitroliner Chimneys.

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Company

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City Zone State

new literature

(Continued)

information. Specific information is presented on the insulation of roofs and attics, sidewalls, floors, crawl spaces and basements—*Owens-Corning Fiberglas Corp., Dept. I-BL-1230, Toledo 1, O.*

Residential Evaporator

BULLETIN 131 (superseding Form CA 117) covers Model BH residential evaporator available in five sizes ranging in capacity from 2 to 7½ tons. Tables and diagrams show capacities and dimensions—*Bohn Aluminum and Brass Corp., Betz Div., Danville, Ill.*

Direct Fired Heaters

INDUSTRIAL HEATING application manual was prepared to serve as a guide for the selection of properly sized equipment and design of systems using large capacity direct fired heaters. The booklet contains 61 pages of text, drawings, forms, tables and charts. It is divided into seven sections: 1) Definition of Terms; 2) Advantages of Direct Fired Heaters; 3) Heat Loss Calculations and Air Distribution; 4) Fuels and Distribution Systems; 5) Controls Sys-

tems; 6) Fuel Consumption; and 7) Conversion Tables—*Lennox Industries Inc., Dept. 1, Marshalltown, Ia.*

Asbestos and Insulating Materials

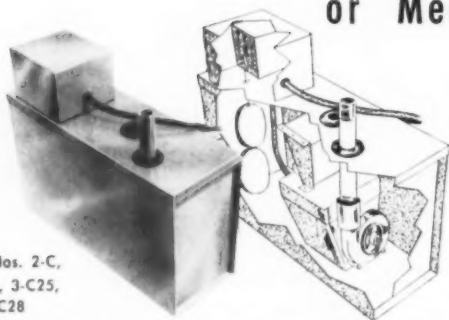
BUYING AND SELLING GUIDE (10 pages) includes information on five new products — "Flex-Sulation" preformed insulation for pipes and tubes; "Gum-Bestos" asbestos paper tape; "Vibra-Stop" and "Flexi-Duct" duct connectors; and "Dux-Sul-Glue" adhesive for applying duct insulating felt. Also included are descriptions and prices of the company's regular line of pipe coverings, sheets and blocks, asbestos paper, tape, duct insulation, cements and combustion chambers—*Grant Wilson, Inc., Dept. AA-3, 111 W. Jackson Blvd., Chicago 4.*

Gas Welding and Cutting Torches

GAS WELDING AND CUTTING HAND TORCHES, outfits, tips and accessories are described in a recently revised 36 page catalog. New and improved products listed include a general purpose welding torch with stainless steel head and fixed flow valves and two series of hand cutting torches. Specify Form ADC 702E—*Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17.*

LITTLE GIANT CONDENSATE UNITS...

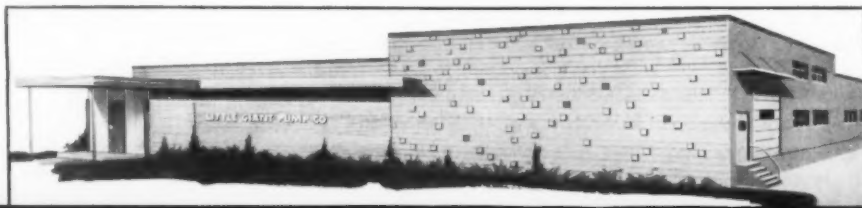
designed to fit any Air-Conditioning
or Mechanical Refrigeration Unit!



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New Home of Little Giant Pump Co. • Triple Production Capacity To Meet Increasing Demand

Small and compact, this little Giant condensate unit is the most economical on the market. Superior design and quality make it the one most preferred by air-conditioning manufacturers and distributors. Solve your condensate problems by installing a Little Giant Condensate unit.

Write for information about our shallow pan condensate units, designed especially for installations where minimum height is important.

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Robert A. Wasson

► ROBERT A. WASSON was elected president and general manager of the Clarage Fan Co., Kalamazoo, Mich., at a recent meeting of the firm's board of directors. Mr. Wasson, who has been vice president and general manager since 1945, succeeds Harry R. Clarage, who died suddenly in December of last year. All other officers of the company will continue in the positions they now hold—C. C. Wheeler, treasurer; S. H. Downs, vice president, engineering; C. R. McConner, vice president, sales; L. R. Spencer, vice president, manufacturing; and A. H. Rankin, secretary and assistant treasurer.

Mr. Wasson joined the firm as a member of the Kalamazoo sales staff, was later transferred to Chicago and then to New York. He became manager of the New York office in 1929 and three years later was made eastern district manager. In 1944 he returned to Kalamazoo as assistant general manager. The year following he was elected to the board of directors and was named vice president and general manager, a position he has held since that time. Active in the air moving industry, Mr. Wasson has served two terms as president of the National Association of Fan Manufacturers, has also served on the board of directors and several committees of the Air Moving and Conditioning Association. He is a past president of the New York chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers.

► ARKLA AIR CONDITIONING CORP. is conducting a series of 11 service training schools on "Sun Valley" gas air conditioning units at its Evansville, Ind., factory. Two schools have already been held and others are scheduled for Mar. 21-25; April 4-8; April 25-29; May 16-20; Sept. 26-30; Oct. 10-14; Oct. 31-Nov. 4; Nov. 14-18; and Dec. 12-16. Product and sales schools are scheduled at the Little Rock plant April 11-14, May 23-27 and Dec. 12-16.

► CENTURY ELECTRIC CO. has reorganized its national sales force into six major divisions. Each of five of the divisions is headed by a divisional sales manager, who reports directly to George Henderson, general sales manager. Newly appointed division sales managers are Gunar Moe, northeast; Fred Powers, southwest; William D. Helm, midwest; James H. Bolton, north central; and James S. Smith, southeast. The western division includes the Los Angeles, Phoenix, Portland, Salt Lake City, San

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U.S.A. Patent Nos.
2,722,372 and 2,855,874.
Other Patents Pending.
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**Increases heating and
combustion efficiency!**

**Provides air power for
bulk materials handling!**

**Exhausts corrosive gases
and abrasives!**

Quickdraft provides industry, commerce, institutions and homebuilders *power draft* engineered for economical and efficient combustion regardless of building or atmospheric conditions. Models suitable for every heating or incinerator application . . . eliminate pulsating or chattering, puffing, smoking and sooting. Reduce building costs, no tall, unsightly stacks required. Quickdraft also provides industry with 1/4 inch to 60 inches W.G. static pressure for exhausting corrosive gases, abrasives and paint spray. Heavy-duty, high-pressure models, 6 inches to 30 inches diameter, are available for moving bulk materials or anything that can be moved by air. Because there are no motors, fans or bearings in exhaust line, only Quickdraft avoids costly clogging, corrosion of moving parts or fan failure.

IMPORTANT NOTICE

For withstanding corrosive gases, all Quickdraft units are available in standard acid resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (P.V.C.) and with plastic and Fibreglas coatings.

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FANS OR BEARINGS IN EXHAUST LINE



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DATA on your application . . . now.

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CORPORATION**

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we hear that

(Continued)

Francisco, Seattle and Spokane branch office territories. These offices will report directly to Mr. Henderson.



MOBILE LABORATORY contains extensive facilities for testing air and air cleaning equipment. More than 2000 city officials, engineers and other persons concerned with air pollution visited the laboratory during its 14 state tour.

► A MOBILE "CLEAN AIR LABORATORY" sponsored by Trion, Inc., recently completed a 13,000 mile trip through 14 states, the District of Columbia and a part of Canada. The laboratory visited city officials,

universities and industrial plants in 17 cities, also played host to the general public in some locations in an effort to alert people to the dangers of air pollution and to promote electronic air cleaning as one of the corrective measures.

► WESTINGHOUSE ELECTRIC CORP. plans to spend some \$3,000,000 during the year ahead in a nationwide program to increase public recognition of the "Total Electric Home" concept, according to Chris J. Witting, vice president in charge of the company's consumer products group. In "total electric homes" electricity is used as the only source of energy for heating and cooling, for entertaining the family, preparing and preserving food, and reducing the amount of work that must be done to maintain a home.

The company has commissioned five leading architectural firms, located in different parts of the United States, to design various types of homes specifically for electric living. These homes will be built as models, Mr. Witting said, "but more than that, they will show people that any kind of home can use electricity for heating and air conditioning."

The "Total Electric Home" program, which has been in operation since early last year, is already receiving the cooperation and active support of 85 electric utilities in the country, according to the company. The Edison Electric Institute, which represents



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**100% DUTY CYCLE
225 Amperes Rated Output
5 KW 115/230v AC
1 KW 115v DC
12.9 HP ONAN ENGINE**

**AND
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**ELECTRIC
STARTER**

The world-wide respect and demand for this original Miller gas engine driven welder/power plant has never been greater. To this established popularity has now been added the convenience of Bendix drive electric starting as optional equipment on models AEA-200-L and AEA-200. Model illustrated and headlined is AEA-200-LE.

As a welder, as a power plant, as a pipe thawer, indeed, as a top hand from Canadian uranium mines to Brazilian cattle ranches — and on highway

construction jobs and repair ships between — the AEA-200-L stands quite alone as "the finest in the field." In addition to optional electric starter, road trailers and rubber tired running gear are also available.

Other Miller gas engine driven DC and AC-DC welder/power plants to 300 amperes at 100% duty cycle. Full particulars will be sent promptly upon request, or a demonstration can be arranged at your convenience.

Miller Electric Manufacturing Company, Inc., APPLETON, WISCONSIN

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Imagine turning out nearly 3 feet of gutter per second while shrinking your overhead costs and boosting customer service. **WELTY-WAY** continuous gutter machines do! **WELTY-WAY** precision tailored units fit your individual needs. Regardless of your gutter design, **WELTY-WAY** accepts the challenge "to make the best."

WELTY-WAY reduces basic material costs while utilizing warehouse space, too. Save by buying galvanized iron, aluminum, copper or stainless steel in carload lots. Prepare and store gutter for use on a moment's notice. Takes up slack time and saves needed storage space. **WELTY-WAY** pays for itself in hours!

ONLY WELTY-WAY manufactures stationary (100'-150' per minute) **AND** portable continuous gutter machines. Practically any contour gutter possible with custom-made **WELTY-WAY** machines. Can make high back gutter, too. **STANDARD** machines make low back gutter. Machines which make high back gutter (1/2" to 3") also make low back gutter. Handles 4" (10" girth), 5" (12" girth) and 6" (15" girth).

WRITE TODAY:

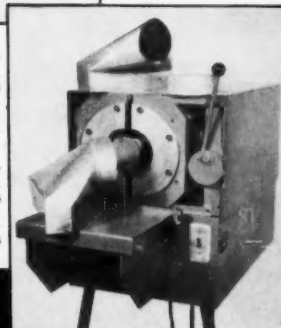
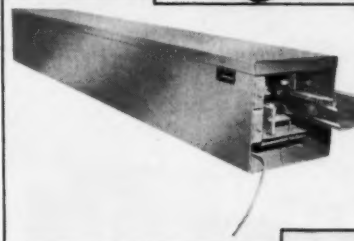
WELTY-WAY PRODUCTS, Inc.
714 FIRST AVE., N.W. CEDAR RAPIDS, IOWA

STANDARD AND DELUXE BOX TYPE MACHINES. CAPACITIES: 26, 28, 29. **MAXIMUM SPEED:** Deluxe, 25 to 35 feet per minute, Standard, 15 feet per minute. **HEIGHT:** Deluxe, 14", Standard, 11 1/2", including motor, 22". **DRIVE:** 3/4 h.p. single phase, 110-120 V motor. **WIDTH:** 15 1/2". **WEIGHT:** 700 lbs. **LENGTH:** 8', including feed table.

STABILIZE COLLARS TO BOOTS AND FITTINGS. One man **ONLY** one hour can attach 200 to 300 collars to boots or fittings . . . **without preforming.** The **WELTY-WAY COLLAR STABILIZER** attaches collars to many forms of boots and fittings from 4" to 8". Collar dies may be changed in nearly 10 minutes. No preliminary crimping or beading needed. 3 machines in 1 . . . (1) Expands boot or fitting, (2) grooves both collar and boot or fitting, (3) stabilizes collar to boot.



PORTABLE CONTINUOUS GUTTER MACHINES: Easily mount your machine on a 1/2 ton pick-up truck or two-wheel trailer. Make your gutter right on the job. Keeps men hanging gutter . . . no waiting. Time and labor eating trips back to the shop eliminated. Installation service available.



The L-28 ECONOMY FLOOR DIFFUSER

Priced to help you meet any competition!

Look at these features:

DIAL DAMPER CONTROL. Just a touch of the toe and the damper opens and closes gently . . . just enough to give perfect control of upward-moving air.

EXTRA WIDE BEADED FLANGE. The L-28 is designed with an extra wide beaded flange to make it easy to cover rough finished openings and speed up installation.

ADJUSTABLE FINS. Pre-set at the factory to give them just the right angle for a full, fan-shaped air pattern, these fins may be adjusted further, if desired.



L-28

4" x 14"
size shown

WHEN ONLY PENNIES stand between you and a successful bid on a housing project . . . this **LOW COST** diffuser will always help clinch the sale for you. Yet no other budget priced diffuser has so many ideas usually associated only with more expensive models.



The **A & A REGISTER COMPANY**

8327 CLINTON ROAD • CLEVELAND 9, OHIO • ATLantic 1-6166

in quality homes like this...



CONNOR provides Constant Comfort Conditions

DRAFTLESS, EVEN TEMPERATURE IN WARM WEATHER OR COLD

In better residential building, the trend's toward installation of an air distribution system that really provides constant atmospheric comfort the year 'round... and Kno-Draft overhead air diffusers usually are the choice.

For warm or cold weather comfort, Kno-Draft diffusers provide draft-free air movement and even temperature throughout the conditioned area. This precisely engineered line has far more mixing efficiency than the average grille... enables easy, accurate, post-installation adjustment... and has a history of halving installation costs! Additionally, Kno-Draft fully satisfies home-owners' demands for a diffuser that offers clean, anti-smudge operation, freedom in placing furniture, and styling and color to match any decorative scheme.

From Connor... superior performance, complementary styling, low cost installation... an advantageous combination no competition-wise contractor would pass up. Write for complete data on the Kno-Draft line today.

CONNOR...

for Constant Comfort Conditions

CONNOR
ENGINEERING
CORPORATION

kno-draft®

CONNOR ENGINEERING CORPORATION

DANBURY • CONNECTICUT

we hear that

(Continued)

the nation's private electric utilities, has adopted the project name and combined it to promote the "Total Electric Gold Medallion Home" during 1960.

► WYZENBEEK & STAFF, INC., recently completed a 6000 sq ft addition to its Chicago factory for the manufacture of "Wyco" flexible shaft equipment. Increased production space was required, the company says, because of the addition of a number of new items to its line. The extra space will also provide for improved shipping facilities.

► JOSEPH T. RYERSON & SON, INC., has added Reynolds aluminum to its steel service center stocks at Seattle, Wash. New aluminum stocks at Seattle include sheet, rod, bar and structural shapes. Service is also being given on commercial building products such as aluminum roofing, siding, roof deck, insulated wall panels, building sheet and aluminum sheet for duct work, according to Robert T. Stafford, general manager at Seattle.

► WESLEY A. SONGER has been elected president and chief administrative officer of Crane Co. Mr. Songer was formerly executive vice president.

► L. J. REAY has been elected vice president and general manager of the Waterman-Waterbury Co. Mr. Reay was previously secretary-treasurer of the Woonsocket Rubber Co. and before that was president of Diamond Iron Works, Minneapolis.

► REPRESENTATIVES of Tiffin Art Metal Co., new midwest distributor for Williams Oil-O-Matic Heating Co., recently attended a sales, product, service and engineering school at the Williams company's plant in Columbus, Ohio. The school, conducted by Williams' management and engineering teams, was divided into two four-day sessions to accommodate the large number of Tiffin representatives.

► STEELITE BUILDINGS, INC., fabricator of corrugated galvanized metal sheets in longer-than-standard sizes, has moved from West Middlesex, Pa., to a new and larger plant in Masury, O. According to the company, sheet lengths are limited only by truck and rail shipping accommodations.

► THOMAS Z. HAYWARD has been named senior vice president and Weaver E. Falberg vice president, sales, of Joseph T. Ryerson & Son, Inc. Mr. Hayward previously vice president, sales, joined the company's Chicago plant in 1917. Mr. Falberg has been associated with the company since 1936. At the time of his recent promotion he was serving as general manager, sales.



TYPE AL furnace limit control

Adjustable and non-adjustable. Bimetal sensing element is maintained in a completely exposed position in the air stream for fast temperature response. Temperature calibration and differential can be preset to your specifications up to 300° F. Standard factory differential is 25° F. Can be supplied with a closer or wider differential on request. Adjustable feature at no extra cost. Standard range of adjustment is 90° F. 40° F. range also available. Furnished with either 3-inch (AL-3) or 7-inch (AL-7) probe.

NEW THERM-O-DISC THERMOSTATS

for furnace fan and limit control applications



TYPE AF furnace fan control

Available with either a 3-inch (AF-3) or 7-inch (AF-7) probe which maintains the bimetal sensing element in a completely exposed position in the air stream. This rapid response position of the sensing element, combined with a snap-acting switch mechanism, provides fast and efficient furnace fan control. Adjustable with a range of 90° F. Maximum temperature 300° F. Factory differential is 25° F. Can be supplied with a closer or wider differential on request.

for
additional
information
... write

Therm-O-Disc

THERM-O-DISC, INCORPORATED mansfield, ohio

DURA-VENT THE SUPERIOR GAS VENT SYSTEM

FOR EVERY VENTING REQUIREMENT

The Most Complete Line

- 3 thru 20 inch pipe and fittings
- All U.L. LISTED



ATTRACTIVE DURA-VENT
TOPS AID DRAFT ACTION.

DURA-VENT IS STRONG.
DIE FORMED PIECES FIT
SNUGLY, SAFELY.

THE ONLY GAS VENT
PIPE WITH THE PAT-
ENTED ROTATING LOCK
SAVING JOB TIME.
JOINTS CAN BE ROTATED
AFTER LOCKING — A
DURA-VENT EXCLUSIVE.

Now Dura-Vent can provide you with Type B vent pipe and fittings for *any* job — 3" thru 20". All Dura-Vent pipes and fittings are *UL listed*. You can be *assured* that Dura-Vent — the *superior* system — can meet all building code requirements for Type B vents, any architectural specifications.

WRITE TODAY FOR LITERATURE
AND NAME OF NEAREST DIS-
TRIBUTOR. TWO STRATEGICALLY
LOCATED PLANTS FOR PROMPT
SERVICE.



Affiliate of Peerless Manufacturing Div. of Dover Corporation
Factory & Western Sales Office, 2525 El Camino Real, Redwood City, Calif.
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KEEP YOUR FURNACE FILTERS



CLEAN as a WHISTLE!

FILTER WATCHER



\$3.95
LIST

THE FILTER SIGNAL THAT NEEDS NO WATCHING

SAVES on FILTERS

Lets you get maximum use from each filter. Eliminates guesswork, tells you when it's time to change . . .

SAVES on FUEL

Dirty filters waste fuel. A clean filter insures full air and heat delivery.

SAVES on CLEANING

A clean filter cleans the air, prevents dust and dirt from recirculating through the heating system.

SAFEGUARDS your FURNACE

A clean filter assures the free flow of air through the furnace . . . prevents dangerous and damaging furnace overheating.

FILTER WATCHER provides both a convenience and a safe-guard that belongs on every forced warm air heating or cooling system.

The Filter Watcher installs on the outside of the furnace jacket between the filters and the blower. As the filter becomes dirty and clogged, the blower sucks air through the Filter Watcher Whistle gradually building up an audible whistling alarm that automatically tells you when it's time to replace the filter.



Send Today for Further Information

Viking Instruments, Inc.
EAST HADDAM, CONN.

we hear that

(Continued)



W. G. FRANK (left), president of American Air Filter Co., congratulates Nelson award winner C. Louis Meyer

► C. LOUIS MEYER, Chicago, recently was honored as American Air Filter Co.'s "Outstanding Young Salesman" for the year 1959. Mr. Meyer became the first recipient of the annual Robert W. Nelson memorial award, established last year by members of the family of the late vice president of American Air Filter Co.



R. L. Siebert

► R. L. SIEBERT has been elected president and treasurer of the Milwaukee Electric Tool Corp., succeeding his father, A. F. Siebert, who died on January 11. The new president, formerly executive vice president and secretary, has been with the firm

since 1924, when he and his father started the company. Both were previously associated with a predecessor firm, A. H. Peterson Mfg. Co. Other newly appointed officers are Lester H. Erickson, vice president, who was elected secretary and will continue as general manager, and Jack R. Jaeger, who was named comptroller and assistant secretary-treasurer. Mr. Jaeger was also elected a member of the board of directors.

► THE ANNUAL JANITROL factory service school series began in February and will extend through May 21. Three specialized courses, each of a week's duration, are under the direction of Robert Mees, technical training supervisor. The courses include heating, cooling, and advanced cooling, and each course is offered four times during the series. Classes are limited to 25 students so that each receives personalized instruction on operating equipment.



MONCRIEF'S
IMPROVED
FEATURES
LOWER on-the-job COST

**GALVANIZED
OR
ALUMINUM**

**EASIER To
ASSEMBLE**

**MORE
PROFITABLE
TO USE**

MONCRIEF DUCT, PIPE and FITTINGS have many improved features that simplify work and lower the cost of installations. There are: new Jumbo Size snap-lock pipe in five-foot lengths. New snap-set hooks for rectangular and stack connectors. New adjustable boots, and many other features including Convenient Packaging in easy to handle cartons. Save Time and Money by ordering MONCRIEF Pipe and Fittings for your next job.

Write for FREE Catalog.



MONCRIEF FURNACE COMPANY

676 Hemphill Ave., N. W., ATLANTA 1, GA.

"CORRECT PRACTICE in OIL HEATING"

NOW AVAILABLE TO YOU!

A complete reprint of the valuable series

by J. J. Mirabile

This practical series covers every angle of oil burner work, including arrangement of shop . . . stocking of parts . . . record-keeping . . . installation procedures . . . the handling of crews . . . how to make heating surveys . . . how to size combustion chamber . . . how to install thermostat . . . how to start the burner . . . how to use testing instruments . . . and how to operate a service department. It contains, as well, a complete list of causes and cures of oil burner troubles that will serve as a reliable guide in making service calls.

Every shop handling oil burner jobs should own this book. Full size, 8½ by 11 inches — 57 pages of practical helps. Send \$1.00 for a copy to the address below.

KEENEY PUBLISHING COMPANY

6 No. Michigan Avenue

Chicago 2, Ill.

Cut ANY Shape in Metal...

with a **BEVERLY THROATLESS SHEAR!**

- Capacities to 3/16" in mild steel
- Make clean, knurl-free cuts in any metal to capacity
- High Carbon High-Chrome Blades
- Built to last a lifetime



**Here's What a
Beverly Can Do!**

Cuts made in
18 ga. metal
with Model B-1

Beverly Shears are the most versatile metal shearing tools you can use. Unique shoulder design permits any cut . . . rack and pinion gives great power with little effort. Alloy steel body for maximum rigidity and strength. Made in 4 models.



Model B-3
with Ball
Bearing
Hold Down

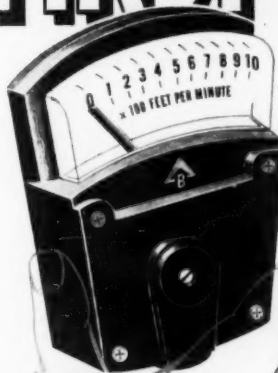
Write for illustrated circular — or see your Beverly Distributor.

Beverly SHEAR MFG. CO.

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Chicago 43, Ill.

FIRST in QUALITY and POPULARITY!



floret **AIR VELOCITY INDICATOR**

Takes guesswork out of checking the operation of forced air heating, cooling and ventilating installations. Use it to:

- ✓ Check air flow at registers, grilles, diffusers, convectors.
- ✓ Spot objectionable air movements in rooms.
- ✓ Detect leaks around doors and windows.
- ✓ Check air flow in display cases, reach-in refrigerators, walk-in coolers, etc.

\$12.90

FACTORY NET

The ideal pocket-size air velocity indicator; direct-reading; can be used for checking air flow through openings as small as ¼" in diameter. Range 0-1000 ft./min. Supplied with pocket case.

BACHARACH INDUSTRIAL INSTRUMENT CO.
200 N. BRADDOCK AVE. • PITTSBURGH 8, PA.

RUSH details on FLORET Air Velocity Indicator to

NAME _____
COMPANY _____
STREET ADDRESS _____
CITY & STATE _____

F-29



OPERATOR SHOWS HOW TO FUSE ALUMINUM to galvanized iron during Chase Brass & Copper Co.'s duct sheet fabricating exhibit

► SHEET METAL CONTRACTORS, engineers and others interested in sheet metal fabrication recently visited Chase Brass & Copper Co.'s New York warehouse to watch demonstrations designed to show how easily aluminum duct sheet can be handled, prefabricated and transported. Roll forming, spot welding of aluminum to galvanized iron, metal stitching

of aluminum to aluminum or other materials, and the soldering or low temperature brazing of aluminum to aluminum were some of the techniques demonstrated.

► THE AIRTEMP DIV., Chrysler Corp., recently held an open house to celebrate the establishment of its first West Coast branch office and warehouse. Guests, including air conditioning and heating dealer-contractors, builders, consulting engineers and civic officials, were taken on a tour of the new facilities, which are located at 6001 E. Randolph St., Los Angeles. Joseph B. Ogden, vice president of sales, and Sydney Anderson, formerly general manager of the Packaged Heating and Cooling Dept. and now on West Coast assignment, acted as hosts.

► H. E. USINGER, president, and R. H. Hoffman, treasurer, Berger Bros. Co., have retired from the firm effective January 20. New officers are H. B. Feltman, president; F. P. Landenberger, vice president and treasurer; and W. S. Brown, secretary.

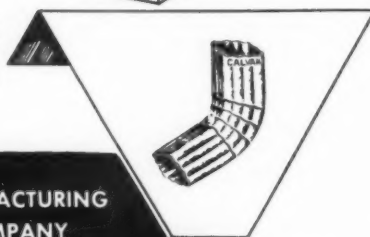
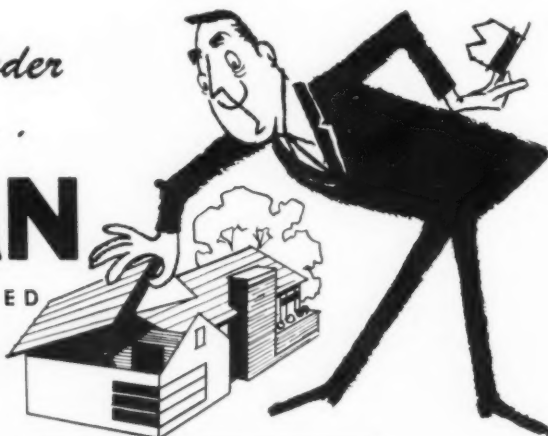
► SOUTHERN SCREW CO. is using a new package for sheet metal screws, bolts and other fasteners. The new package features a diagonal repeat pattern designed to promote recognition and increase sales appeal.



*Best Elbows Under
Any Roof...*

GALVAN
PRECISION PRODUCED
ELBOWS

Precision installation is possible, too . . . because GALVAN ELBOWS always "FIT LIKE A GLOVE" . . . you can do a perfect job in less time . . . which means a better profit margin for you.



Ask your jobber
for GALVAN elbows
...in any size
...any gauge
...and any metal
including gal-
vanized steel,
copper and mill
finish or embossed
aluminum.

GALVAN

MANUFACTURING
COMPANY

BOX 267
NEW ALBANY, INDIANA

- ALL SIZES
- ALL GAUGES
- ALL METALS

MAKE A SLOW JOB FAST AND EASY!

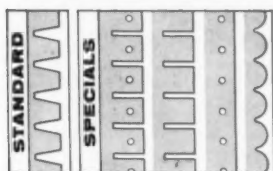


With a Ruoff Notcher you can notch flat or curved sheet metal at speeds up to 18 feet per minute. Automatic feed and depth of notch are adjustable.

Ten times as fast as hand cutting! Time for measuring and layout eliminated!

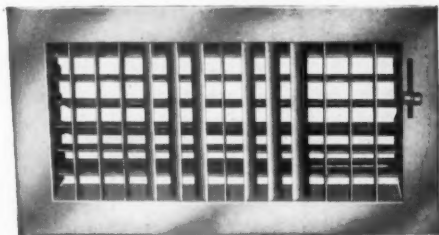
Notches up to 21 gauge sheet with 1/4 hp — 110 volt motor, up to 16 gauge with larger motor.

Ruoff Notchers are supplied complete with floor stand. Just plug it in and you are ready to go. Immediate delivery.

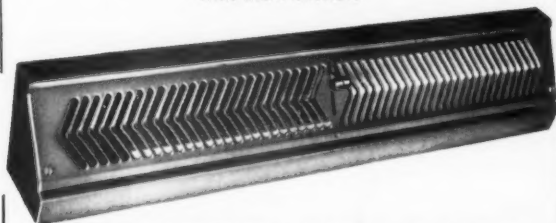


Write to Ruoff & Sons, Inc., Bellmawr 4, N.J., for complete specifications. In Canada: Brown Baggis Foundry and Machine Co., Ltd., Hamilton Ontario.

Distributors: Franchise available in some areas.
WRITE TODAY



MODEL AV-7—AIR VANE HIGH EFFICIENCY TYPE
For cooling and heating, four-way deflection with multi-shutters



ARRO-FLO DIFFUSOR AF-20" and AF-30"

HIGH EFFICIENCY BASE-BOARD TYPE OUT-OF-WALL REGISTER FOR BOTH HEATING AND COOLING PURPOSES. Our distinctive Arro-Line styling blends with any surroundings, measuring only 3 3/8" in height, allowing for ideal installation under windows.

Write for Catalog
National GRILLE AND REGISTER CO.
10740 Broadway Ave., Cleveland 25, Ohio

Zatko SILENTRIDE[®] V-Belts

... absorb more vibration

... and this is not an idle claim! Laboratory tests back up "Silentride" performance in reducing noise and vibration.

"Silentride" Belts are especially designed for heating and air conditioning equipment, window and attic fans.

More information on request.

T.M. Pending

Zatko METAL PRODUCTS CO.
20850 ST. CLAIR AVE., CLEVELAND 17, OHIO
Zatko—World's Largest Manufacturer of stamped one-piece Pulleys

SOLDER ALUMINUM with ordinary soft solders

Here it is — a major breakthrough in aluminum fabrication — LA-CO Aluminum Flux. You can solder aluminum just like any of the common metals . . . using ordinary 40-60, 50-50, 60-40 or 95-5 solders . . . ordinary soldering irons or torches. Secret's in the remarkable fluxing action which achieves a perfect bond between aluminum and solder — as strong as the solder itself. Needs no cleaning, scraping, sanding . . . yet it is completely acid-free. There's nothing else like it!



Here's How!

**LA-CO
Aluminum
FLUX**

Production, service and maintenance men — write for sample (on company letterhead, please).



THE LAKE CHEMICAL CO.
3072 W. Carroll Ave., Chicago 12, Ill.

wholesaler doings . . .

► To assist Chicago dealer-contractors to "strike it rich" during 1960, Follansbee Engineering and Supply Co. held a day-long sales program built around an Alaskan Gold Rush theme. Atmosphere was provided by the wholesaler's salesmen dressed as sourdoughs and six models attired as dance hall girls; decorations that duplicated pioneer saloons and land offices; and a gambling casino with all the games of chance that were popular during the early development of the Alaskan territory.

Sourdoughs and dance hall girls, acting as the reception committee, steered guests to the saloon where coffee was served until the program got under way.

The models also helped to introduce Perfection Industries' 1960 line of heating and air conditioning equipment and other products handled by Follansbee Engineering and Supply Co.

Sales promotion programs designed to help dealer-contractors locate and sell more prospects during 1960 were introduced and explained. Slogans such as "Every home is your gold mine, if you prospect it" and "Every sales tool is your pick and shovel for prospecting" helped point the way toward more concentration on selling as the key to better profits.

Programs directed at specific markets and de-



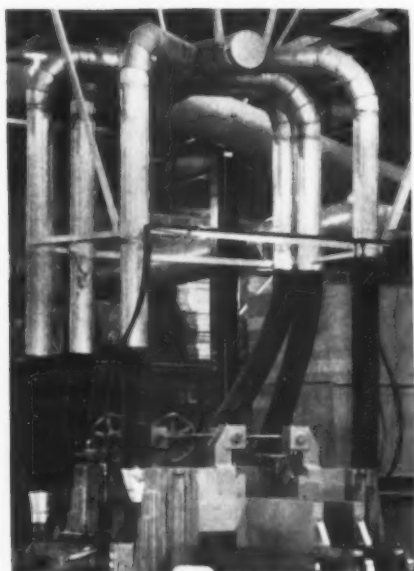
"IT TAKES HARD WORK and good tools to build sales," says E. Lee Merrill, president, Follansbee Engineering and Supply Co.



"PLAY UP YEAR 'ROUND COMFORT and the features that make it possible," says Arthur S. Anderson, Follansbee sales manager

(Continued on page 140)

YOU SAVE MORE WITH FLEXAUST® HOSE



Thousands of successful installations prove that use of Flexaust hose and Portovent retractable duct with metal duct systems lower installation costs — but there are other important advantages

- Exceptional abrasion resistance
- Corrosion resistance
- Noise absorption
- Durability under heavy flexing
- Provision for expansion and contraction
- Easy relocation of hoods and machines

Made of high quality neoprene coated fabrics 1½ to 36" i.d.

Write today for full details
Distributors in all principal cities

THE FLEXAUST CO.

DEPT. AA 100 PARK AVE.
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Manufacturers' Agents

Are you interested in securing additional lines?

We are occasionally asked by our manufacturer advertisers to suggest the names of manufacturers' agents in various sections of the country whom they can contact in regard to representation of their residential heating, air conditioning and sheet metal products.

If you would like your name listed in our records for inquiries we may receive on your territory, we invite you to write us. There is no charge in connection with this service.

American Artisan

6 N. Michigan Ave., Chicago 2, Ill.

**NEW IMPROVED
SQUARE
DUCT HANGER**

With new "Positive Lock" cam action feature... No Special Tools! Hammer does the Job! Available in six lengths.

Cam Action Assures "Positive Lock"

PAT. NO. 256 3242

A. Round Pipe Hanger used when joint is offset from duct
B. Simple Application of Square Duct Hanger as shipped to you

DUCT

SQUARE DUCT HANGER
No. 15

SEE your SUPPLIER or WRITE for FREE samples TEST THEM YOURSELF ON THE JOB!

• Sharp prong pieces
• Insert "Positive Lock"—tap in place
• Drive sharp prong into joint

DUCT
DUCT
DUCT

A. M. HEXDALL CO. Manufacturers of Sheet Metal Specialties
MORRIS, ILLINOIS

DIFFUSER DIES FOR SALE

Complete set of dies to produce all sizes of Floor Diffusers — both stamped and bar on edge type. Replacement costs of these dies — \$15,000.00. Sample on request.

\$5000⁰⁰

Complete set of dies to produce a Baseboard Diffuser 18 inches long. Multi angle louvre blades — latest design. Replacement cost of these dies — \$10,000.00. Sample on request.

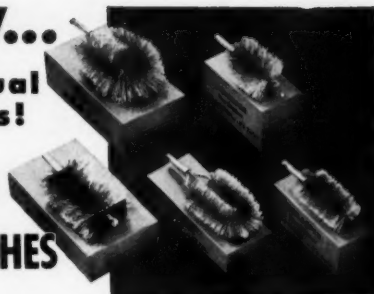
\$4000⁰⁰

Address Key 1182,
American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

NOW...

**in individual
cartons!**

SCHAEFER FLUE BRUSHES



- No more pricked fingers or danger from rusted bristles.
- Easier to display, merchandise and handle.
- Longer-wearing SILVER-BRITE RUSTPROOF WIRE or Black Tempered Wire.
- Every Carton clearly marked as to number, shape, size or specifications.
- Each and every brush in its own carton insures clean stock and eliminates re-wrapping.
- There's a correct Schaefer Brush for every industrial and domestic use.

Schaefer's special alloy "Silver-Brite" rustproof spring steel wire has been developed for longer wear, more effective cleaning. Here's extra value, extra satisfaction in any brush and each is individually packaged for easier handling.

**NO INCREASE
IN PRICE!**

SCHAEFER BRUSH MFG. CO.

117 West Walker St.

Milwaukee 4, Wisconsin

BUT SCHAEFER—IT'S SAFER

Write for SCHAEFER Catalog on flue and furnace brushes, or for information on any special brushes for specific requirements.

Smith's 180° plus

SHEET METAL BENDING BRAKE

Bends Sheet Metal ALL THE WAY OVER AGAINST ITSELF Without Re-positioning the Workpiece



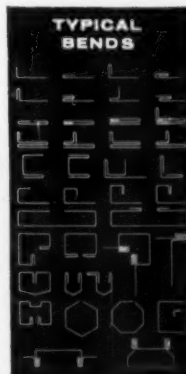
Smith's Sheet Metal Bending Brake is a ruggedly built production tool, capable of making almost any desired bend quickly, easily, and accurately. When required, hold-down mandrel segments may be removed to permit bending box sections, etc. Bends made on a Smith's Brake are always straight because bending force is applied up through the edge of the mandrel segments permits getting into corners, slots, or crevices too tight for any other equipment.

Made in 3 Models: Capacities of 14, 16 and 20 ga. and bending widths up to 48".

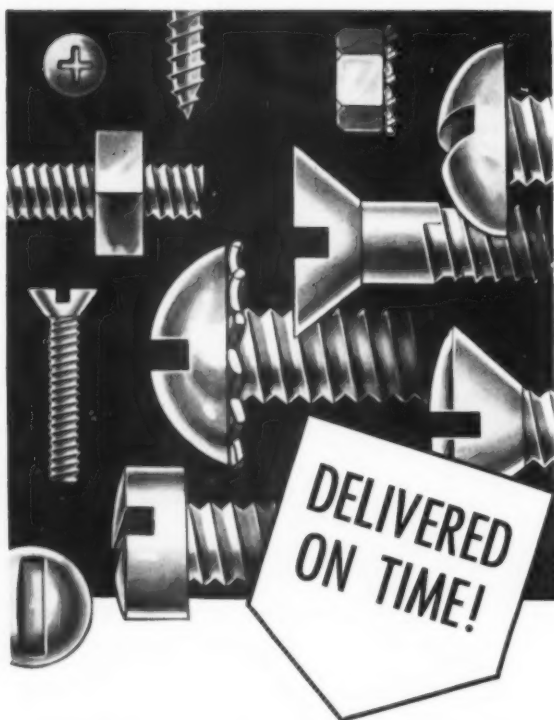
Write for descriptive catalog and complete information.



Forms Boxes with inward or outward turned flanges



R. E. SMITH MANUFACTURING CO.
1124 ELIZABETH STREET WAUKEGAN, ILLINOIS



NATIONAL LOCK

standard and special-purpose

FASTENERS

You can depend on National Lock Fastener service to keep your production lines humming. Standard Fasteners are available in a complete selection of uniform quality. What's more, National Lock offers a full line of special-purpose screws, bolts, nuts and washers, too . . . every size and type to meet your specific requirements. Our fastener engineers will work with you. Order from the dependable production and engineering resources of the National Lock Company.

Catches • Latches
Crating Bolts
Handles • Pulls • Hinges
Knobs • Sems • "Keps"®



REGISTERED TRADE MARK OF
ILLINOIS TOOL WORKS

NATIONAL LOCK COMPANY
 ROCKFORD, ILLINOIS • • FASTENER DIVISION

wholesaler doings

(Continued)

signed for use during different seasons of the year were outlined. One kit distributed tells how to locate prospects during the "off season" and concentrates on selling furnace cleaning as well as preventive maintenance. Another, devoted to summer air conditioning, lists an entire sales promotion schedule for newspaper and direct mail campaigns.

The heating promotion kit includes directions for getting the most out of radio advertising and telephone canvassing. Two kits — one on summer air conditioning and the other on heat pumps — describe how the dealer-contractor can work with the builder in selling his houses.



WHOLESALE'S SALES STAFF and Miss Klondike set Gold Rush theme for sales training session for dealer-contractors



FEATURES OF NEW MODELS are explained to dealer-contractors by Perfection Industries sales manager, Stuart A. Smith. From left are P. Magnabosco, Charles J. Ackerman, Mr. Smith, Charles E. Ackerman and Fred C. Greer Jr., manufacturer's salesmen

Manufacturers' representatives handling the products on display were present to help with the program and to provide additional suggestions on how to use equipment features as sales tools.

► THE RICHARDS AND CONOVER Steel and Supply Co., 6333 St. John Ave., Kansas City, Mo., has been appointed wholesale distributor for Janitrol heating and air conditioning equipment. The firm will pro-

Only International Offers So Much LESS For The Money

LESS SPACE

New, sheer, compact cabinet design actually makes the new International oil furnaces narrower and up to a foot lower than many competitive models. Less floor space required . . . ideal for projects!

LESS SERVICE HEADACHES

These new assembled units are built to work *better* than they have to. All models are U. L. approved, and meet or surpass latest U. S. Commercial Standards for operating efficiency.

LESS INSTALLATION TROUBLE

The new Internationals practically install themselves. Key components — burner, blower and controls — come assembled in place and factory-wired to the easy-to-get-at junction box. Faster and simpler to install!

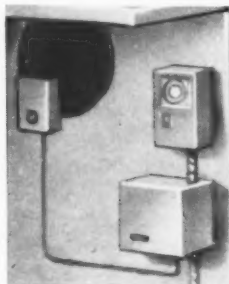
LESS CUSTOMER SALES- RESISTANCE

Show your customers International's new sheer styling. Explain how these new units cost less to buy and operate, and how easily they convert to cooling. The new Internationals sell better because they're an all-around better buy.



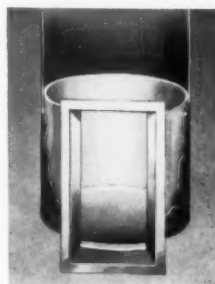
And only INTERNATIONAL'S Oil Line combines these Most-Wanted Features!

**New
Flue-
Installed
Pyrostat!**



An M-H tried and true Pyrostat is factory mounted right in the flue passage and wired to a relay in the junction. No bother of inserting and wiring a primary control in the stack. Easier to Install . . . Service . . . SELL!

**New
Combustion
Chamber!**



Fiberfrax®, Carborundum's new insulating refractory, can withstand temperatures up to 2300°F. Gives sure, safe protection against flame damage. Effectively muffles combustion noises too. Another real sales clinching feature!

**Efficient
"Wrap
Around"
Exchanger!**



Provides more heat in less space than other designs. Eliminates clanking expansion and contraction noises, and is wonderfully easy to clean and keep clean. Electrically welded . . . gas-tight!

Available in Lo Boy (illus. above), Hi Boy and Counterflow models, each in 3 outputs, 84,000 to 112,000 BTU, in choice of belt or direct drive blower. Write for catalog!

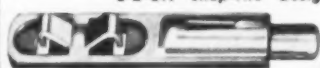
INTERNATIONAL HEATER CO., UTICA, N. Y.
Dept. A



E-Z-ONS

Cost Less
Offer MORE!

E-Z-ON "Snap-Tite" Design No. 29



Special tail piece has retractable snap end bearing . . . eliminates need to bend damper or spring duct to insert damper.



You pay less and get more features with speedy E-Z-ON damper regulators, because they're design engineered to do a better job . . . quicker.

Here's Proof: • Lower Price . . . Means Lower Cost to You
• Double Prongs Mean Double-Grip . . . No chance of swiveling
• Washer is Permanently Attached . . . No loose washer to drop or fall in pipe
• Modern "Sweep" Wing Nut is Eye-appealing
• Adds new beauty to installations • Balanced Construction . . . Prevents possible binding of damper in duct.

M. A. GERETT CORP.

724 W. Winnebago St., Milwaukee 5, Wis.
all leading jobbers stock E-Z-ON
Stocked in Canada by THERMIDAIRE CORP. 79 Cumberland St. Toronto

As In The Past
68 Years
HANDY
PIPE
fittings will
go together and
fit "like sixty"
in nineteen sixty.
F. Meyer & Bro Co
Peoria, Ill.

wholesaler doings

(Continued)

vide sales, service and engineering for residential and commercial products in Kansas and western Missouri. Janitrol sales activity will be under the direction of Dudley Pace Jr., vice president and director of sales, and E. G. Guignon, manager, heating and cooling division.

► ONE HUNDRED YEARS of uninterrupted service to its customers is the record of Lyon, Conklin & Co., Inc., Baltimore, which is currently celebrating its centennial year. Chas. A. Fink, vice president of the company, speaking at a recent anniversary dinner, outlined some of the outstanding events in the company's history, and in the history of the country in general.

The company was founded in October of 1860, when James Buchanan was president and the population numbered 31,443,321. William L. Lyon, then 28, borrowed the money necessary for the venture from Enoch Pratt, one of Baltimore's more famous citizens. Mr. Lyon guided the firm through the secession depression of 1861-1863, the Civil war and the depressions following the war, the panic of 1893, and the Spanish-American war. The firm was incorporated in 1906, and six months later, following Mr. Lyon's death, Edgar Lyon became president and Robert H. Lyon vice president.

Edgar Lyon guided the firm through World War I and the periods of depression and prosperity that followed. Osborne F. Murphy now heads the company as president.

Twice during its 100 year history, the company has found it necessary to move its Baltimore headquarters into larger facilities as business volume increased. Its Washington, D. C. branch warehouse, established in 1913, was moved to new quarters in 1951.

The firm's present headquarters building is dedicated to the sheet metal industry, in memory of William L. Lyon, founder and first president. The dedication plaque reads: "He who embodies in his business the priceless principles of honesty and integrity builds upon a foundation stronger than stone, more lasting than bronze, and establishes for those who follow a noble ideal."

► MARK YANDLE has formed the Yandle Heating Supply Co., with offices at 1019 N. Brevard St., Charlotte, N. C. Mr. Yandle, formerly associated with Carolina Heating and Appliance Co. of Charlotte, will serve heating and air conditioning dealer-contractors and sheet metal contractors in the Piedmont areas of North and South Carolina. He will handle gas and oil furnaces, air conditioning equipment, registers and grilles, gutters, prefabricated chimneys, and other products.

PREFERRED

by Contractors

Why do plumbing, heating and air conditioning contractors prefer MILWAUKEE Electric Tools? Because they're heavy-duty designed—specially built for contractors. No job is too tough for a MILWAUKEE. They're rugged . . . pack plenty of power and speed, are perfectly balanced for easy handling in any position.

In addition to top performance, MILWAUKEE is recognized across the country as *the quality line*. No other electric tools are more carefully designed or constructed than MILWAUKEE. What's this quality worth to you? Indirectly it means more profits because quality MILWAUKEE tools stand up under continuous hard use . . . you get long, dependable service and superior workmanship . . . yet, MILWAUKEE tools cost you no more.

Your MILWAUKEE Electric Tool Distributor will gladly arrange a demonstration for you. See him today, or write for literature and prices.



Heavy-Duty Portable Electric TOOLS



ELECTRIC SHEAR

16 ga. capacity, heavier on trim cuts, and up to 17 ga. stainless. Full $\frac{1}{4}$ HP, 4000 strokes per minute. Cuts tight curves to $\frac{1}{2}$ " radius. Leaves smooth, clean edges.

PITTSBURGH LOCK-HAMMER

Handles 30 to 22 ga. sheet metal. Lightweight, powerful, closes seams at rate of 20 feet per minute. Perfectly balanced, guides easily along seams. Ball and roller bearings.

RIGHT ANGLE DRILLS

$\frac{1}{4}$ " to $\frac{1}{2}$ " chuck capacities in 7 basic models. Speed ranges 215 to 3000 RPM. $\frac{1}{2}$ HP motor. Head and handle swivel 360°, lock in any position. Perfect for tight-spot drilling.

SAWZALL

Electric Hacksaw with full $\frac{3}{4}$ " stroke. Cuts wood, metal, plaster, pipe. $\frac{1}{2}$ HP MILWAUKEE-built motor, 2250 strokes per minute. Lightweight, easy to handle.

ELECTRIC HAMMER

Compact, lightweight. $\frac{3}{4}$ " rated capacity. 3000 blows per minute. Cushioned recoil action. Ideal for chipping, scaling, anchoring, drilling, etc.

Also available: Circular Saws ($6\frac{1}{2}$ ", $7\frac{1}{4}$ ", $8\frac{1}{4}$ " dia. $1\frac{3}{4}$ HP at the blade). Electric Drills from $\frac{1}{4}$ " to $1\frac{1}{4}$ " capacity, Screw Drivers and Nut Runners.

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MILWAUKEE ELECTRIC TOOL CORP.
5352 W. STATE STREET • MILWAUKEE 8, WISCONSIN

Look under—Tools—Electric



A0-104

appointments . . .

► **MORRIE E. HALVORSEN** as sales manager of Milwaukee Electric Tool Corp. Mr. Halvorsen has been with the company since 1955 and has served as assistant sales manager since 1958.



Morrie E. Halvorsen



Marc McGuire

► **MARC MCGUIRE** as sales manager of Utility Fan Corp., a division of Utility Appliance Corp. Mr. McGuire, previously assistant sales manager, was associated with U. S. Electrical Motors before joining Utility four years ago.

► **AUSTIN F. LEACH** as manager, stud welding sales, for Omark Industries. Mr. Leach was formerly with General Electric Corp., where he served in various

engineering and sales capacities for the welding department.

► **LELAND SAYERS** as electric heat adviser, a newly created position, for White-Rodgers Co. Mr. Sayers' services as speaker, counselor or adviser are now available to contractor associations, equipment manufacturers and similar groups. He was previously with the Southwestern Electric Cooperative of Illinois, where he was in charge of residential sales promotion and public relations activities. He was also instrumental in establishing basic standards of installation and insulation for electric heating.



Leland Sayers



James A. Gray

► **JAMES A. GRAY** as general sales manager of Connor Engineering Corp. Before joining the Connor firm, Mr. Gray was with the Worthington Corp.

WARNING — Heating Contractors & Distributors

It is possible that round ceiling diffuser applications in their present form may soon be obsoleted by the introduction of the revolutionary new **BALANSTAT!**

This is a Public Service Announcement By



LENLY MANUFACTURING CO.

901 E. 9th Street

Los Angeles 21, California



Model
C-85-FB
OIL-FIRED
85,000 Btu
Output



Get the complete story . . .
CALL, WRITE OR WIRE NOW:

FLOOR FURNACE with a FILTER

ONLY G/A HAS THESE ADVANTAGES

- 30" HIGH . . . 16 1/2" below joist.
- INSULATED JACKET
- CIRCULATED, FILTERED AIR
- QUIET OPERATION
- RETURN AIR OPENING . . .
to facilitate a return-duct if used.
- EASY ACCESS . . .
for filter removal or furnace service from top.
- PRE-ASSEMBLED & WIRED

**GENERAL AUTOMATIC PRODUCTS
CORPORATION**

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Baltimore 13, Md.
EAslern 7-7703

Elgo Ventilating Specialties

NEW! EXTRUDED ALUMINUM SHUTTERS

Shutters of modern design which give you all of these features: Lightweight, Full Weather Strip, Low Freight Cost, Easier Installation, Concealed Pivot Pins, Rust and corrosion Proof and Natural aluminum finish with fluted frames.

Write for complete specifications.

**Free
CATALOG**

ELGO SHUTTER & MANUFACTURING COMPANY
2736 W. Warren Detroit 8, Michigan



In celebration of our 60th year of world-wide progress...

A Genuine Coleman gas-lite

Yours to give now as a
"buyer's bonus" when
you install



America's Only Bonded Line Heating and Air Conditioning

This new Coleman Gas-Lite is the key to the most complete and most exciting business-building program ever offered through heating and air conditioning dealers. Most complete because it includes every imaginable aid to selling. Most exciting because it gets an enthusiastic response from everyone in the market for heating or air conditioning.

Here's the plan. As an anniversary salute, we're making it possible for you to offer a genuine Coleman Gas-Lite to your customer with the installation of any Coleman central furnace, wall heater, floor furnace or air conditioner. It's an offer your prospects will go for when you give them the lamp as a bonus for buying now! For more information, use the coupon below or call your Coleman distributor for your complete program kit containing full details—right away!

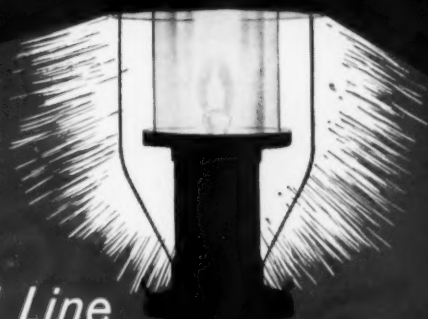


Best selling tool of all—you offer this exclusive \$500 bond with every unit you sell

Coleman's Gas-Lite promotion will be announced to home owners in the March 26 Saturday Evening Post.



Also makers of famous Vit-Rock water heaters, Decorama space heaters, Coleman lanterns, camp stoves, jugs and coolers—mobile home heating and air conditioning



Works on any gas—installs 4 ways
Can be mounted on post (as at left)



Can be placed on table



Can be mounted on wall with decorator bracket

• The Coleman Company, Inc., Wichita 1, Kansas

Quickly send more information on your Gas-Lite promotion.

Name _____ Title _____
Firm Name _____
Address _____
City _____ Zone _____ State _____

Starting in April:

REVISED DATA FOR ESTIMATING DUCTWORK COSTS

Next month *American Artisan* will begin publication of revised, field-checked figures to help you estimate costs of duct sections, fittings, and components.

These up-to-date Duct Work Estimating Tables will cover weights and required fabricating times of components in sizes from 44 x 12" to 4 x 7" and fittings needed for elbows, transitions, branches, and boot takeoffs.

Figures are based on actual stop watch data collected exclusively for *American Artisan* by E. B. Root and Darwin A. Downing. Studies were made "on the spot" of fabrication work in eight typical shops ranging in size from large to small.

American Artisan will publish these figures, starting next month, in seven installments. You'll find them a reliable tool to take both the guesswork and the drudgery out of estimating weight and time to fabricate ductwork.

Don't risk missing a single installment in this series. Use the coupon below to order a new subscription, to extend your present subscription, or to order the magazine for others in your firm.

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Business

appointments

(Continued)

► **JOHN M. FURIN** as assistant sales manager of Viking Air Products, Div. of National-U.S. Radiator Corp. Mr. Furin joined the division in 1955 as a member of the sales staff. In his new position he will assist in the direction of 18 factory salesmen and manufacturers' representatives throughout the country. Ralph Ellsworth has been appointed dealer sales promotion manager for Cuyahoga county, a newly created position. He will work with wholesalers to build an expanded dealer-contractor network.



Robert C. Boehm

► **ROBERT C. BOEHM** as vice president of Tuck-Aire Furnace Co. Mr. Boehm joined the firm in 1953 as a salesman in the southeastern territory, later was transferred to the Pacific Northwest. He became general sales manager in 1957.



Glenn Gray

► **GLENN GRAY** as factory sales engineer covering portions of Texas and Louisiana for The Payne Co.

► **VICTOR G. PAPPAS** as a sales representative covering Alabama, Mississippi, Louisiana and western Tennessee for Temco, Inc. He will have headquarters in Jackson, Miss.

G-B BLANKET INSULATION DISTRIBUTORS

Listed in the yellow pages

(See ad on facing page)

AKRON, Ohio, The Asbestos Supply Co.
ALBANY, Ga., Industry Insulation Co.
ALBANY, N. Y., Hudson Valley Asbestos Corp.
ALBUQUERQUE, N. M., Mt. States Insulation Co.
AMARILLO, Tex., McDonald Engineering & Insulating Co.
Morrison Supply Co.
ATLANTA, Ga., Reynolds Aluminum Supply Co.
AUSTIN, Tex., Cinbar Engineering Co.
BALTIMORE, Md., Leroy Insulation Co.
BANGOR, Me., Eastern Glass Co.
BATON ROUGE, La., Eagle Asbestos & Packing Co.
BEAUMONT, Tex., Coburn Supply Co.
Solar Supply Co.
BILLINGS, Mont., Big Horn Supply, Inc.
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CHAMPAIGN, Ill., Lewie David Co.
CHARLESTON, W. Va., Asbestos & Insulating Co.
CHARLOTTE, N. C., D & B Insulation Co.
CHICAGO, Ill., E. C. Carlson Co.
Culberg Asbestos & Cork Co.
CHILLICOTHE, Ohio, Southern Ohio Insulating Co.
CINCINNATI, Ohio, R. E. Kramig Co.
CLEVELAND, Ohio, Ohio Asbestos & Insulating Co.
COLUMBIA, S. C., Industrial Insulation Div. of
Richland Oil Co.
COLUMBUS, Ohio, Santeier Brothers
Culberg of Ohio
CORPUS CHRISTI, Tex., Precision Insulation Co.
DALLAS, Tex., Acme Insulation & Supply Co.
Payne-Ladewig, Inc.
DAVENPORT, Iowa, Republic Electric Co.
DAYTONA BEACH, Fla., B & F Insulation Co.
DENVER, Colo., Gene Wright Lumber Co.
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FT. SMITH, Ark., Gunn Distributing Co.
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FT. WORTH, Tex., Bracken Co.
GREENSBORO, N. C., Starr Davis Co., Inc.
GULFPORT, Miss., Paine Supply Co.
HOUSTON, Tex., Precision Insulation Co.
INDIANAPOLIS, Ind., Lyon Lumber & Supply Co.
IRON MOUNTAIN, Mich., Champion, Inc.
JACKSON, Miss., Paine Refrigeration & Supply Co.
JACKSONVILLE, Fla., Eckles Distributors, Inc.
Ferber Sheet Metal Works
Reynolds Alum. Sup. Co.
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LUBBOCK, Tex., Mechanical Equip. Co.
Morrison Supply Co.
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Gibbons Supply Co.
MIAMI, Fla., Reynolds Aluminum Supply Co.
Southern Metal Products Co.
MILWAUKEE, Wis., F. R. Dengel Co.
MINNEAPOLIS, Minn., Asbestos Products, Inc.
MOBILE, Ala., Shook & Fletcher Insulation
MONTGOMERY, Ala., Shook & Fletcher Insulation
MOOREHEAD, Minn., Fargo-Moorhead Insulation Co.
NASHVILLE, Tenn., Reynolds Aluminum Supply Co.
NEWARK, N. J., Eastern Steam Specialty Co.
NEW ORLEANS, La., Eagle Asbestos & Packing Co.
NEW YORK, N. Y., Eastern Steam Specialty Co.
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RALEIGH, N. C., Reynolds Aluminum Supply Co.
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RICHMOND, Va., Reynolds Aluminum Supply Co.
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SAN ANTONIO, Tex., San Antonio Machine & Supply Co.
SAN DIEGO, Calif., Western Fibrous Glass Products Co.
SAN FRANCISCO, Calif., Western Fibrous Glass Prod. Co.
SAVANNAH, Ga., Reynolds Aluminum Supply Co.
SEATTLE, Wash., Western Fibrous Glass Products Co.
SHREVEPORT, La., Frith Sales Co.
SOMERVILLE, Mass., Insulation Products, Inc.
ST. LOUIS, Mo., The Stovey Company, Inc.
ST. PAUL, Minn., Asbestos Products, Inc.
SULLIVAN, Ill., Lewie David, Inc.
SYRACUSE, N. Y., Burnett Process, Inc.
TAMPA, Fla., Eagle Roofing & Art Metal Works, Inc.
TULSA, Okla., Ball Distributing & Engr. Co.
TUPELO, Miss., Paine Supply Co.
WASHINGTON, D. C., Walter E. Campbell Co., Inc.
WEST PALM BEACH, Fla., Southern Metal Prod.
WICHITA, Kans., General Metals, Inc.



**They compared
efficiency,
permanence,
and applied cost
...and bought
ULTRALITE®**

FOR INFORMATION AND PROMPT DELIVERY
CALL YOUR LOCAL ULTRALITE DISTRIBUTOR
LISTED IN ADJOINING COLUMN

Compare shop-applied duct liners — and you, too, will find that there's nothing like ULTRALITE, the *only* duct liner made exclusively of long, textile-type glass fibers. This long-staple strength means more resilience and less likelihood of damage, both in the shop and on the job. It means that ULTRALITE will stay permanently in place without losing thickness and that it will not flake off into the air stream even under high velocities.

ULTRALITE rates "tops" in thermal and acoustical efficiency and "rockbottom" in application cost. It's available from your nearby distributor (see adjoining column) in various thicknesses and densities, and with a new gray fire resistant coating that conforms to strictest fire codes.

GUSTIN-BACON *Manufacturing Co.* 
204 W. 10th St., Kansas City, Mo.

Thermal and acoustical glass fiber insulations . . . molded glass fiber pipe insulation
Couplings and fittings for plain and grooved end pipe.

New **ANEMOTHERM** **AIR METER** gives you

Air Velocity
Air Temperature
Static Pressure

with

P U S H B U T T O N
ease

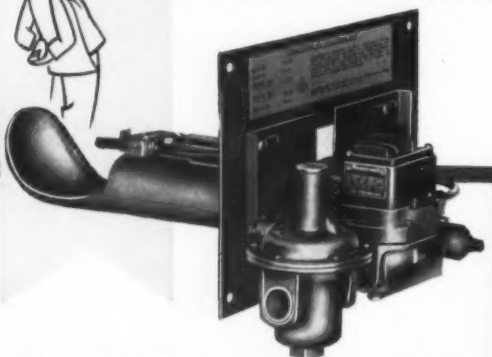


The new model 60 Anemotherm Air Meter helps you balance heating, ventilating and air conditioning systems the modern pushbutton way. It puts air velocity, air temperature and static pressure at your fingertips ... pays for itself through time saved on only one major job. • **Write for Bulletin 55 giving all essential data.**

AC 1338B

ANEMOSTAT CORPORATION OF AMERICA
10 EAST 39TH STREET, NEW YORK 16, N. Y.

MAKE SURE YOU HAVE A
BANNER YEAR
IN VOLUME AND PROFITS



**SELL AND INSTALL THE UNSURPASSED
OG-56 OIL-TO-GAS CONVERSION UNIT
by BANNER BURNER**

- Flawless Design and Construction.
- No-Burn-Out, One-Piece Cast Iron Venturi and Flame Spreader.
- Fast, Easy Installation... Fits through Four-Inch Oil Burner Sleeve.
- M. H. Controls, Available in Powerpile or 24-Volt System.
- 60,000 to 150,000 BTU Input.

Write for complete details

BANNER BURNER CO.
227 EAST INDIANOLA AVENUE, YOUNGSTOWN 7, OHIO

appointments

(Continued)

► **G. W. BREIEL** as manager, sales administration, for Armco Steel Corp. Mr. Breiel, formerly manager of western area sales, will be succeeded by Sidney A. Yager, previously district manager of the Chicago sales office. Robert E. Getter is the new district manager of the Chicago sales office. Paul F. Pardonner, formerly district manager of the Detroit sales office, has been appointed manager of central area sales. Succeeding him as district manager at Detroit is Robert H. Perry.



William G. Barnard



Thomas Shimanski

► **WILLIAM G. BARNARD** as manager of the Des Moines sales office of the Trane Co. Mr. Barnard joined the firm in 1949 as a sales engineer and has been with the Des Moines office since 1950. He replaces Tracy Johnson, who has retired. Thomas Shimanski has been appointed manager of the sales offices in Madison and La Crosse, succeeding his father, V. E. Shimanski, who retired in January after 34 years with the company.

► **LAWRENCE H. BAKER** as manager of branch sales for the Airtemp Div., Chrysler Corp. Mr. Baker joined the division in 1952 as a field engineer in the New York office. At the time of his recent promotion he was manager of field sales in the applied machinery and systems department at Dayton. Sydney Anderson has been appointed branch manager of the West Coast air conditioning and heating branch. Mr. Anderson was formerly general manager of the packaged heating and cooling department.

► **WALTER POINSKI** as district sales manager in eastern Ohio for Reznor Mfg. Co. He succeeds Joseph H. O'Brien, who has retired. Mr. Poiniski will maintain headquarters at 43 Clemmer Ave., Akron, O.

► **LEROY D. NUTTER** as vice president heading the Dallas district sales office of the Siegler Corp.'s Holly-General Div. The newly established Dallas office will serve Texas, Oklahoma, New Mexico, Louisiana, Arkansas, Mississippi, Alabama, Nebraska, Kansas, Iowa and Missouri as well as part of Tennessee. Other new vice presidents heading new district

NEW **sioux** air slugger

DOES 101 JOBS
IN HALF THE TIME!



METAL WORKERS KIT NO. 270C



METAL CUTTER—
CUTS METAL SMOOTH & FAST!
—moves accurately and cleanly
through sheet metal with excellent
maneuverability and on any
cutting radius.



CHISEL—SHEARS BOLTS, SPLITS NUTS,
pulls pins, breaks spot welds.



RIVET BUSTER—SHEARS ALL TYPES OF
RIVETS



PUNCH—PUNCHES OUT PINS, BOLTS,
studs, rivets, bearing races, and pressed bearings.



SHEET METAL PUNCH—PUNCHES PERFECT HOLES
FOR METAL SCREWS—A precision made sheet
metal punch that will punch perfect holes for
metal screws faster than you can put them
in place.



SPOT WELD
BREAKER

BREAKS SPOT WELDS QUICKLY, easily, inex-
pensively. A hardened tool that will take long,
hard, punishing use.



**SCRAPER—SCRAPES AWAY RUB-
BER COATING,** insulation or al-
most anything without damage to metal.



EXTENSION
CHISEL

GETS AT
THOSE "HARD TO REACH"
PLACES and shears bolts, rivets,
pins, breaks spot welds.



CRIMPER—
MAKES A STRONG NEAT, SHEET METAL JOINT,
means faster, neater, better work, and more
profit.

The **SIoux Air Slugger** is one of the most useful of air tools. It will not create the hazard of fire or explosion and will save cost of torches and gas. Design features include a one piece barrel with no parts to get misaligned or wear out; and a cast iron handle that will survive the roughest treatment. It's light, sturdy, and Sioux dependable.



Look for **SIoux** Tools in the yellow pages under "TOOLS, ELECTRIC"

ALBERTSON & CO., INC.

SIoux CITY, IOWA, U.S.A.

AIR IMPACT WRENCHES • AIR SCREWDRIVERS • ELECTRIC IMPACT WRENCHES • DRILLS • SCREWDRIVERS
• GRINDERS • SANDERS • POLISHERS • FLEXIBLE SHAFTS • PORTABLE SAWS • VALVE GRINDING MACHINES
• ABRASIVE DISCS.

NEW LOW-PRICED

Portable Electric Atomizing Humidifier



Here's a new portable humidifier that's bound to be a profit leader for you! The Model 50 MISTILATOR is a portable electric atomizing humidifier that features the ultimate in performance and economy. It operates on an aerosol principle in which water is atomized at the rate of 1 pint per hour rapidly and evenly, without wetting the surrounding area. This produces a suspension of minute mist-like particles in the air.

The MISTILATOR 50 uses no more electricity than a small light bulb and can be plugged into any electrical outlet in the home. Its attractive polished aluminum and stainless steel container is corrosion resistant.

The MISTILATOR is quiet in operation and is recommended for homes, offices, apartments, hospital wards, etc. It will adequately humidify up to 8000 cubic feet.

THE SKUTTLE DEFENSOR 504 This unit operates on the same aerosol principle as the Mistilator, only in a larger capacity. The DEFENSOR 504 has a reservoir capacity of 8 pints of water, and will adequately humidify areas up to 12,000 cubic feet. It is made of corrosion-resistant synthetic parts that insure long life and trouble-free performance.



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MANUFACTURING COMPANY
MILFORD, MICHIGAN

appointments

(Continued)

offices are Earl C. Hefner, San Francisco, who will supervise sales in Oregon, Washington, Idaho, Montana and parts of California and Nevada, and John F. Droge, Los Angeles, who will direct operations in Colorado, Wyoming, Utah and part of Nevada. Jackson L. Garner will be vice president in charge of sales for San Diego County and Arizona.

► **OLIVER FELLOWS** as a district sales manager for Heil-Quaker Corp. Mr. Fellows' territory includes Indiana, Ohio and Kentucky.



Oliver Fellows



William L. Orton

► **WILLIAM L. ORTON** as field sales representative for Janitrol Heating and Air Conditioning, a division of the Midland-Ross Corp. He will handle residential and commercial heating and air conditioning products in north central Ohio. His headquarters are at Mansfield.



I. G. Brownlee



William G. Momeny

► **I. G. BROWNLEE** and **William G. Momeny** as district sales managers for Stewart-Warner Corp.'s heating and air conditioning division. Mr. Brownlee, assigned to central Indiana, joined the firm in 1940. Mr. Momeny, with the company since 1949, will serve Chicago, Evanston and western suburbs.

► **WALTER S. WADDINGTON** as sales consultant for the Standard Lines Div., William Wallace Co. A veteran of 20 years with the company, Mr. Waddington has served as sales manager of the division for the last three years. Succeeding him as sales manager is Peter C. Bacigalupi, formerly assistant sales manager.

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DIRECT MAIL piece?

... use **AMERICAN ARTISAN's** **MODERNIZATION CHECK-LISTS**

CHECK-LISTS spell out to the prospect:

THERE IS NO REASON why every heating system cannot provide a "comfortable unawareness" that the equipment is operating. Often, the work required for a professional heating

man to improve or modernize existing systems is minor. Use of these check-lists will help him to determine how his system stacks up against the standards set for a "Good" system.

22 important check points for good heating performance; among these are:

- ☒ Is the furnace less than 15 years old?
- ☒ Are room air temperature differences within 4 degrees between floor and ceiling when outdoor air temperature is 30 F?
- ☒ Have service calls been rare during recent years?
- ☒ Are fuel costs equal to those for similar houses in the vicinity?
- ☒ Are room air temperature differences within 2 degrees between all rooms (at comparable locations)?
- ☒ Does system include a humidifier?
- ☒ Are occupied areas free from noticeable drafts?
- ☒ Has furnace been checked for efficiency within past 12 months?

SPACE FOR A SALES LETTER BY THE DEALER-CONTRACTOR IS PROVIDED ON REVERSE SIDE OF CHECK-LISTS

ORDER
FROM
EDITOR
**AMERICAN
ARTISAN**

THE HEATING, air conditioning and sheet metal check-lists published in the March American Artisan Modernization Issue can be used as direct mail pieces, for presentation by salesmen, as giveaway items for home shows, etc. Designed to remind home owners of their modernization needs, the two-color check-lists are available at the following prices:

Quantity	Cost
50	\$ 0.85
100	1.35
200	2.70
300	4.05
400	5.40
500	6.75
1000	13.50
2000	27.00
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4000	48.00
5000	59.00

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Please rush the following quantities:

_____ Heating check-lists
_____ Summer air conditioning check-lists
_____ Sheet metal check-lists
_____ Standards for Rating Heating Systems cards

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(Please print)

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Company

Street Address

City and State

I am a dealer wholesaler manufacturer
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GUARANTEED

... not for 5 years, not for 10 years

... not for 15 or 20 years, but

**UNCONDITIONALLY
GUARANTEED**



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Zeph-Air

Zeph-Air is the gas furnace with the cast-iron heart. The entire heating element is unconditionally guaranteed — for LIFE!

A limited number of exclusive franchises protect our dealers — and we assist them with many kinds of dealer helps. Write today to see if a franchise is open for you. We'll give you the details you need and want — no obligation, of course. We'll also be pleased to furnish complete information on our air conditioning units for use with our heating equipment.

XXTH CENTURY

HEATING & VENTILATING CO.

Since 1894

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AKRON, OHIO

appointments

(Continued)

► **THOMAS M. GIEBEL** as sales engineer, national accounts, for Mueller Climatrol Div. of Worthington. He will serve as liaison man with the Worthington Corp.'s air conditioning and refrigeration division. He joined Mueller Climatrol in 1956 as a sales representative in Georgia and Alabama, becoming sales engineer, heating, in 1958, the position he held prior to his recent promotion. Gordon H. Hansen succeeds Mr. Giebel as sales engineer, heating.

► **POWER EQUIPMENT CO.**, Richmond, Va., as Virginia sales representative for the heating and cooling coil department of Bohn Aluminum & Brass Corp.'s Danville, Ill., division.

► **C. R. HAYES**, 10139 Edgefield Dr., St. Louis, as representative in the St. Louis area for Peerless Mfg. Div., Dover Corp. and its affiliate, Dura-Vent Corp. Other new representatives are Donald T. Back, 14628 Robinwood Dr., Plymouth, Mich., who will cover Ohio, and Robert Dean, 1516 Monroe Ave., S.W., Birmingham, who will serve Alabama and the cities of Columbus, Ga. and Pensacola, Fla.

Obituaries

Albert F. Siebert

ALBERT F. SIEBERT, 81, president of Milwaukee Electric Tool Corp., died of a stroke at Milwaukee Hospital on January 11. In 1923 Mr. Siebert purchased the A. H. Peterson Mfg. Co., where he had been employed as sales manager, and changed its name to Milwaukee Electric Tool Corp. He remained active in the growth and expansion of the company until the time of his death. He is survived by his widow; his son, Reginald, who is now president of the firm; and a daughter.

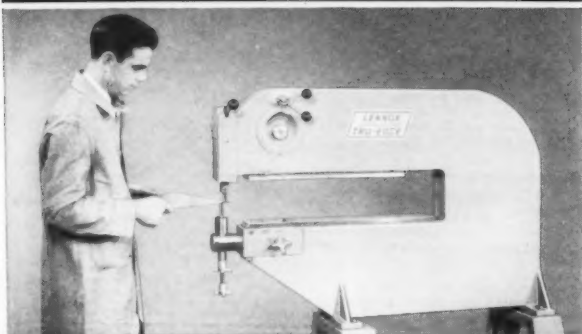
John L. Gurley

JOHN L. GURLEY SR., retired vice president of Munkel Heating & Cooling Inc., Columbus, O., died at his home on January 5. He was 71 years old. He is survived by his widow, four daughters, and three sons.

R. J. Nebel

R. J. NEBEL died Friday, November 27, 1959. Mr. Nebel was vice president of the Beverly Shear Mfg. Co., Chicago, manufacturers of sheet metal working machinery.

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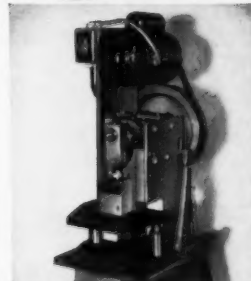
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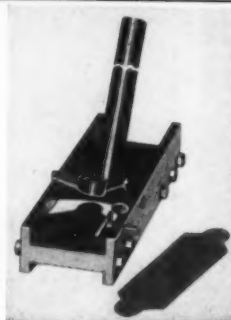




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The many heating and ventilating installers who inspected METLVENT at the second southwest heating and ventilating exposition in Dallas discovered, first hand, that this is the finest Type B Gas Venting equipment on the market, today . . . easy to install, simple, safe and secure; finest in its field. They also heartily welcomed the better service and savings to be effected by our large scale production and central location.



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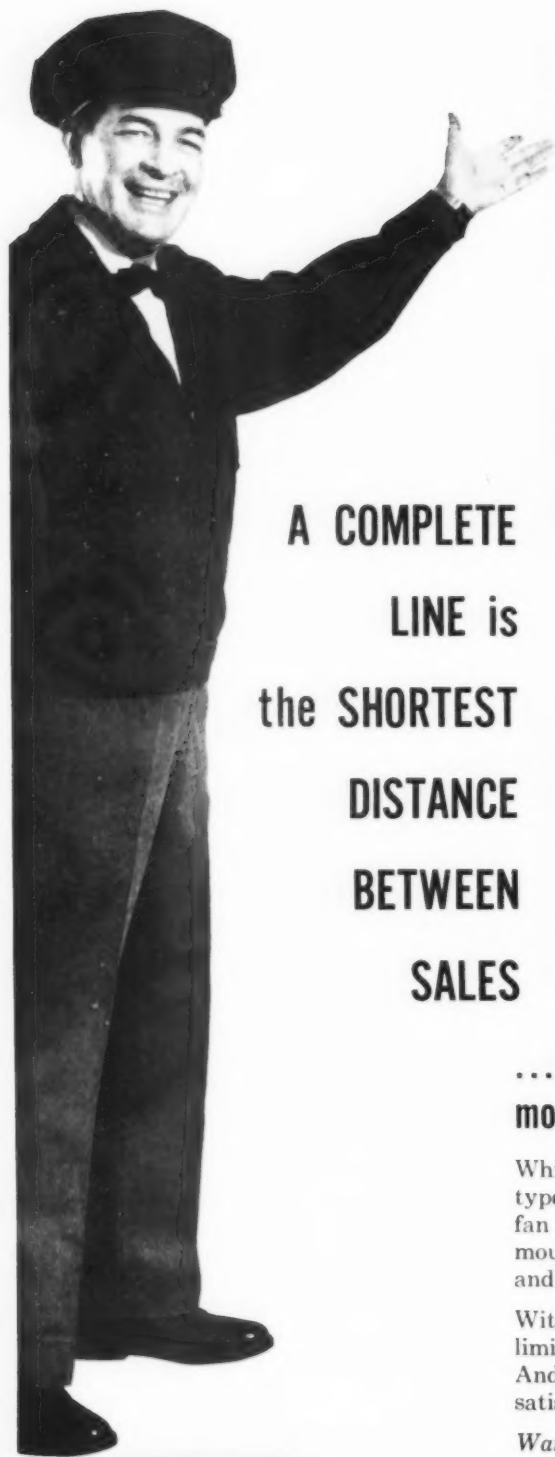


HART & COOLEY



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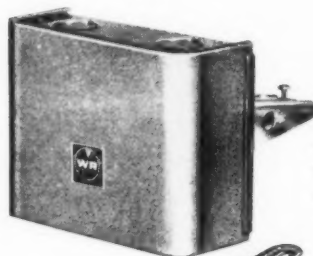
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the SHORTEST
DISTANCE
BETWEEN
SALES



CUSTOMline ACE
Single Insertion—
designed for narrow spaces



CUSTOMline DEUCE
Dual elements for
shallow insertions



HYDRAULIC-ACTION
Two controls in one
unit—finest fan and
limit available

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